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November 2000

Final Supplemental Environmental Impact Statement

**For Amendment to the
Survey & Manage,
Protection Buffer,
and other Mitigation Measures
Standards and Guidelines
VOLUME II - APPENDICES**



Forest Service National Forests in Regions 5 and 6 and the Bureau of Land Management Districts in California, Oregon, and Washington Within the Range of the Northern Spotted Owl

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

BLM/OR/WA/PT-00/065+1792

Appendices

Appendix A

Final SEIS on Management of Late-Successional and Old-Growth Forest-Related Species Within the Range of the Northern Spotted Owl, 1994

Appendix A

Description of the Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest-Related Species Within the Range of the Northern Spotted Owl, which this Final SEIS Tiers to and Supplements

This appendix describes the Final SEIS for the Northwest Forest Plan (USDA, USDI 1994a). It provides the analysis for the Northwest Forest Plan and served as the basis for the Record of Decision for Amendments to Forest Service and Bureau of Land Management planning documents within the range of the northern spotted owl.

The Northwest Forest Plan FSEIS is a multi-volume document. Volume 1 consists of a summary and three chapters: Chapter 1-Purpose and Need, Chapter 2-Alternatives, and Chapter 3&4-Affected Environment and Environmental Consequences, as well as the glossary, distribution list, and list of preparers. Volume 2 has 9 appendices (A-I), as follows:

- A - Forest Ecosystem Management: An Ecological, Economic, and Social Assessment (Report of the Forest Ecosystem Management Assessment Team)
- B - Additional Information on Standards and Guidelines
- C - Letters of Direction
- D - Related Direction and Activities
- E - Implementation Structure
- F - Response to Public Comments
- G - Final Biological Opinion
- H - Scientific Analysis Team (SAT) Report
- I - Monitoring and Evaluation Plan

Appendix J consists of separately bound technical information documents. Appendix J2, separately bound, contains Results of Additional Species Analysis, upon which much of the analysis in this Survey and Manage SEIS is based.

To receive a copy of the Northwest Forest Plan FSEIS, send a request specifying whether you want the entire document or only portions (Volume 1, Volume 2, or Appendix J2). Send your request to:

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Appendix B
Standards and Guidelines
for the
No-Action Alternative



Appendix B

Standards and Guidelines for the No-Action Alternative

The standards and guidelines in this appendix are from the Northwest Forest Plan Record of Decision (USDA, USDI 1994b) for:

- *Survey and Manage*
- *Manage Recreation Areas to Minimize Disturbance to Species*
- *Protect Sites From Grazing*
- *Protection Buffers*
 - *Late-Successional Reserves*
 - *Managed Late-Successional Areas*
 - *Matrix*
- *[Bats] - Provide additional protection for caves, mines, and abandoned wooden bridges and buildings that are used as roost sites for bats.*

These standards and guidelines apply to the No-Action Alternative, which represents the current situation. These five elements are the only portions of the Northwest Forest Plan addressed in this SEIS. The text is excerpted verbatim from the Northwest Forest Plan Record of Decision, except for minor text formatting such as underlines on section titles, spelling corrections of species names as noted, and changes and corrections made to Table C-3 as described in the background section of Chapter 2 of this SEIS. The page numbers in parentheses are the pages where the standards and guidelines appear in the Northwest Forest Plan Record of Decision.

Survey and Manage

(Northwest Forest Plan Record of Decision, p. C-4)

These measures may apply within any land allocations. However, the survey and manage provision for each species will be directed to the range of that species and the particular habitats that it is known to occupy. The “survey and manage” standard and guideline will provide benefits to amphibians, mammals, bryophytes, mollusks, vascular plants, fungi, lichens, and arthropods. Table C-3 at the end of this section of these standards and guidelines shows what species are covered by the survey and manage provision, and which of the following four categories is to be applied to each. The standard and guideline has four components, and priorities differ among them.

1. ***Manage known sites.*** Management of known species sites should receive the highest priority of these four categories. Efforts must be undertaken to acquire information on these known sites and to manage this information so that it is available to all project planners. An effective way to accomplish this is to compile the information in a GIS data base. Those efforts should be coordinated by the Regional Ecosystem Office, and should be completed expeditiously. As soon as the information becomes available, it should be used in the design or modification of activities. Activities that are implemented in 1994 should use this information to the greatest degree possible. Activities implemented in 1995 and later must include provisions for these known sites. In most cases, the appropriate action will be protection of relatively small sites, on the order of tens of acres. For some species, including some vascular plants, the appropriate action will include the use of specific management treatments such as prescribed fire. For rare and endemic fungus species, areas of 160 acres should be temporarily withdrawn from ground-disturbing activities around known sites until those sites can be thoroughly surveyed and site-specific measures prescribed. For one fungus species, *Oxyporous nobilissimus*, there are only six known sites and two of these do not currently have a protected status. Management areas of

all useable habitat up to 600 acres are to be established around these two sites for the protection of those populations until the sites can be thoroughly surveyed and site-specific measures prescribed. The actions to protect *Oxyporous* must be undertaken immediately.

2. Survey prior to ground-disturbing activities. Measures to survey for species and manage newly discovered sites are to be phased-in over a somewhat longer timeframe than the measures specified for currently known sites (see above). For some species, these efforts have been ongoing through rare and sensitive species programs. Where such efforts have been ongoing, they should continue. However, protocols have not been developed for surveys for all of these species, and the expertise needed to conduct them is not readily available in some cases. Efforts to design protocols and implement surveys should be started immediately. Where surveys are completed, the information gathered from them should be used to establish managed sites for species. Within the known or suspected ranges and within the habitat types or vegetation communities associated with the species, surveys for Del Norte, Larch Mountain, Shasta, Siskiyou Mountains, and Van Dyke's salamanders, and red tree voles (and lynx, see p. C-47) must precede the design of all ground-disturbing activities that will be implemented in 1997 or later.

Development of survey protocols for the other 71 species listed in Table C-3 must begin in 1994 and proceed as soon as possible. These surveys must be completed prior to ground-disturbing activities that will be implemented in FY 1999 or later. Work to establish habitat requirements and survey protocols may be prioritized relative to the estimated threats to the species as reflected in the SEIS. Management standards will be developed to manage habitat for the species on sites where they are located. These surveys may be conducted at a scale most appropriate to the species. For most species, this survey would start at the watershed analysis level with identification of likely species locations based on habitat. Those likely locations would then be thoroughly searched prior to implementation of activities. For other species, the identification of likely sites may be most appropriately done at the scale of individual projects. Surveys should be designed for maximum efficiency, focusing on the likely range and habitats of the target species. Multi-species surveys should be used wherever they would be most efficient. To the degree possible, surveys should be designed to minimize the number of site visits needed to acquire credible information. Survey protocols and proposed site management should be incorporated into interagency conservation strategies developed as part of ongoing planning efforts coordinated by the Regional Ecosystem Office.

3. Extensive surveys. Conduct extensive surveys for the species to find high-priority sites for species management. Specific surveys prior to ground-disturbing activities are not a requirement. Rather, the surveys will be done according to a schedule that is most efficient, and sites will be identified for protection at that time. This strategy entails some risk because some species sites may be disturbed prior to completion of surveys. It is recommended primarily for species whose characteristics make site and time-specific surveys difficult. For example, some fungi only produce fruiting bodies under specific climatic conditions, so finding their location may take several to many years. It would be most efficient to do broad surveys for these species during times of appropriate conditions rather than attempting annual, site-specific surveys. Surveys under this strategy must be underway by 1996. As with surveys described in item 2 above, surveys should be designed for efficiency and standardized protocols should be developed.

4. General regional surveys. The objective is to survey for the species to acquire additional information and to determine necessary levels of protection. Species intended to benefit from this standard and guideline are the arthropods, the fungi species that were not classed as rare and endemic, bryophytes, and lichens. These groups of species are particularly poorly known. Many species have likely not yet been identified, and there is only general information available on the abundance and distribution of known species. The information gathered through these efforts may be useful in refining these standards and guidelines to better provide

for these species as part of the adaptive management process. These surveys are expected to be both extensive and expensive, but the information from them is critical to successful implementation of ecosystem management. They will be initiated no later than FY 1996 and are to be completed within ten years.

Annual status reports are to be submitted to the Regional Ecosystem Office for review beginning at the end of FY 1995. As experience is acquired with these requirements, the Agencies may propose changes to the Regional Ecosystem Office for analysis. These changes could include changing the schedule, moving a species from one survey strategy to another, or dropping this mitigation requirement for any species whose status is determined to be more secure than originally expected. The Regional Ecosystem Office will forward such proposals, along with recommendations, to the Regional Interagency Executive Committee for action as appropriate.

Manage Recreation Areas to Minimize Disturbance to Species

(Northwest Forest Plan Record of Decision, p. C-6)

This standard and guideline applies throughout all land allocations. This standard and guideline will benefit a number of fungi and lichen species whose known locations are predominantly within established recreation sites. This standard and guideline falls within the category of the survey and manage standard and guideline above, and species to be protected through this standard and guideline are among those shown in Table C-3 at the end of this section of these standards and guidelines. Additional information on the habitat requirements of these species are discussed in Appendix J of the Final SEIS.

Protect Sites From Grazing

(Northwest Forest Plan Record of Decision, p. C-6)

This standard and guideline applies throughout all land allocations. This standard and guideline is designed to benefit mollusks and vascular plants. Known and newly discovered sites of these species will be protected from grazing by all practicable steps to ensure that the local populations of the species will not be impacted. Species to be protected through this standard and guideline are:

Mollusks: *Ancotrema voyanum*, *Monadenia fidelis klamathica*, *Monadenia fidelis ochromphalus*, *Pristiloma articum crateris*, *Fluminicola* n. sp. 1, *Fluminicola* n. sp. 11, *Fluminicola* n. sp. 19, *Fluminicola* n. sp. 20, *Fluminicola* n. sp. 3, *Fluminicola seminalis*

Vascular Plants: *Pedicularis howellii*

Protection Buffers

(Northwest Forest Plan Record of Decision, p. C-9)

Late-Successional Reserves

Late-Successional Reserves have been designated based on five elements ... [including] Protection Buffers for specific endemic species identified by the Scientific Analysis Team (SAT)(1993). Additional areas, such as 600 acres around known sites of fungus species *Oxyporous nobilissimus*, are protected under the survey and management standards and guidelines starting on page C-4 of these standards and guidelines. Details are as follows.

Protection Buffers

(Northwest Forest Plan Record of Decision, p. C-11)

Unmapped Late-Successional Reserves result from the application of Protection Buffers (see standards and guidelines below).

Standards and Guidelines for Protection Buffers

(Northwest Forest Plan Record of Decision, p. C-19)

Protection Buffers are additional standards and guidelines from the Scientific Analysis Team Report for specific rare and locally endemic species and for other specific species in the upland forest matrix. The following rare and locally endemic species are likely to be assured viability if they occur within reserves. However, there might be occupied locations outside these areas that will be important to protect as well. Protocols for surveys will be developed to ensure a high likelihood of locating these occupied sites; such surveys will be conducted prior to ground-disturbing activities within the known or suspected ranges and within the habitat types or vegetation communities occupied by these species, according to the implementation schedule for Survey and Manage Components 1 and 2 on pages C-4 and C-5 of these standards and guidelines. When located, the occupied sites need to be protected as follows.

Nonvascular Plants

Ptilidium californicum (Liverwort) - This species is rare and has a very limited distribution in old white fir forests with fallen trees. It occurs on trunks of trees at about 5,000-foot elevation. Mitigation options include finding locations and maintaining stands of over-mature white fir at about 5,000-foot elevation for inoculum and dispersal along corridors; and studying specific distribution patterns. Protect known occupied locations if distribution patterns are disjunct and highly localized by deferring timber harvest and avoiding removal of fallen trees and logs.

Ulota meglospora (Moss) - This species occurs in northern California and southwest Oregon. It is best developed (locally abundant) in very old stands of tan oak, Douglas-fir, and other conifer species further north, but is generally scarce throughout its range. The species is poorly known ecologically. Mitigation activities include conducting basic ecological studies and surveying for presence, particularly in Oregon. Protect known occupied sites if distribution patterns are disjunct and highly localized. Defer timber harvest or other activities that would not maintain desired habitat characteristics and population levels.

Aleuria rhenana (Fungus) - This mushroom is widely distributed but rare and little known throughout its range, known from one collection from Mt. Rainier National Park. It is a conifer litter decomposer. Mitigation activities include conducting ecological studies and surveys to determine localities. Protect known populations if surveys continue to indicate that the population is rare. Defer ground-disturbing activities.

Otidea leporina, *O. onotica*, and *O. smithii* (Fungi) - These mushrooms occur in conifer duff, and are widespread in distribution but uncommon. They are dependent on older-age forests. Specific mitigation options include protecting older forests from ground disturbance where the species are located.

For the plants listed above, it is recommended that Regional or state office-level ecologists or botanists should: (1) maintain a spatially explicit data base of all known sites in National Forests and BLM Districts, and (2) develop species or area management plans, to be implemented under the guidance of the regional botany programs.

Amphibians

Shasta Salamander - This species is very narrowly distributed, occurring only in localized populations on the Shasta-Trinity National Forest. Only a small part of its range is included within Habitat Conservation Areas identified by the Interagency Scientific Committee (1990) (status within Late-Successional Reserves has not been determined). It occurs in association with limestone outcrops, protected by an overstory canopy. All known and future localities must be

delineated and protected from timber harvest, mining, quarry activity, and road building within the delineated site, and a buffer of at least the height of one site-potential tree or 100 feet horizontal distance, whichever is greater, should surround the outcrop. Additional surveys conducted using a standardized protocol must be undertaken to identify and delineate all occupied sites within the species' potential range.

Birds

Great Gray Owl - Within the range of the northern spotted owl, the great gray owl is most common in lodgepole pine forests adjacent to meadows. However, it is also found in other coniferous forest types. In some locations, such as on the Willamette National Forest west of the crest of the Cascade Range, at least some shelterwood harvesting seems to be beneficial for the species by opening up otherwise closed canopy cover for foraging. In doing so, consequences to species such as northern goshawk and American marten must be evaluated. Specific mitigation measures for the great gray owl, within the range of the northern spotted owl, include the following: Provide a no-harvest buffer of 300 feet around meadows and natural openings and establish 1/4-mile protection zones around known nest sites. Within one year of the signing of the Record of Decision for these standards and guidelines, develop and implement a standardized protocol for surveys; survey for nest locations using the protocol. Protect all future discovered nest sites as previously described.

Managed Late-Successional Areas

(From Northwest Forest Plan Record of Decision, p. C-23, Managed Late-Successional Areas, Description)

Managed Late-Successional Areas have been designated for these standards and guidelines based on two elements ... [including] Protection Buffers for specific endemic species identified by the Scientific Analysis Team (1993). Details are as follows.

Protection Buffers - Unmapped Managed Late-Successional Areas result from the application of Protection Buffers (see standards and guidelines below).

Standards and Guidelines for Protection Buffers

(Northwest Forest Plan Record of Decision, p. C-26)

The following standards and guidelines incorporated from the Scientific Analysis Team Report will result in adding unmapped areas to Managed Late-Successional Areas that should be managed as indicated below. These standards and guidelines are to be applied wherever the species occurs outside of designated areas.

The following rare and locally endemic species are likely to be assured viability if they occur within designated areas. However, there might be occupied locations outside these areas that will be important to protect as well. Protocols for surveys will be developed that will ensure a high likelihood of locating these occupied sites, and such surveys will be conducted prior to ground-disturbing activities within the known or suspected ranges and within the habitat types or vegetation communities occupied by these species, according to the implementation schedule for Survey and Manage Components 1, 2, 3, and/or 4 on pages C-4 through 6 of these standards and guidelines. When located, the occupied sites need to be protected as follows.

Nonvascular Plants

Brotherella roellii (Moss) - This very rare species is endemic to the Washington Cascades north of Snoqualmie Pass. It occupies rotting logs in low-to-mid elevation old-growth stands having dense shade, closed canopies, and high humidity. Mitigation options include locating specific populations and protection of large decay class 3, 4, and 5 logs and canopy closure greater than 70

percent. Defer management activities that conflict with maintaining suitable habitat characteristics and known populations levels. The implementation schedule for this species is the same as for survey and manage components 1 and 3.

Buxbaumia piperi, *B. viridis*, *Rhizomnium nudum*, *Schistostega pennata*, and *Tetraphis geniculata* (Mosses) [Note: *Buxbaumia piperi* was removed from Protection Buffer species status in July 1996 to correct an error in the Northwest Forest Plan's Record of Decision.] - Most of these species are fairly rare (the exception is *B. piperi*). They occur on rotten logs and some organic soil, and are shade dependent, occurring in old-growth forests. *S. pennata* occurs only in mature western red cedar forests in the Olympic National Forest and in the Washington Cascades. Mitigation activities include surveying to determine presence and distribution; and, where located, maintaining decay class 3, 4, and 5 logs and greater than 70 percent closed-canopy forest habitats for shade. Shelterwood and thinning prescriptions for timber harvest will cause their demise, as logs dry out. The implementation schedule for this species is the same as for survey and manage components 1 and 3.

Polyozellus multiplex (Fungus) - Ecologically, this mushroom was considered in the same species group as *Albatrellus caeryliopus* and others, listed earlier in the SAT Report under species aided by marbled murrelet mitigation measures. However, *P. multiplex* occurs in higher elevations of the Cascades in silver fir and mixed conifer (and is thus outside the range of marbled murrelet mitigations). It can be locally abundant and is a mycorrhizal species important to forest health. Like its group associates, it is a good indicator of old-growth forests. Mitigation activities for this species include conducting surveys to define its distribution, and studies to assess its habitat requirements. The implementation schedule for this species is the same as for survey and manage components 1 and 3.

Sarcosoma mexicana (Fungus) - This mushroom occurs in deep conifer litter layers in older forests. It is uncommon to rare and is found in the Oregon and Washington Coast Range into British Columbia. Mitigation activities include surveying for locations and protecting deep litter layers of older forests where found. Defer prescribed burning of understory or other activities which would not retain a deep litter layer. The implementation schedule for this species is the same as for survey and manage component 3.

For the plants listed above, it is recommended that regional and state ecologists or botanists should: (1) maintain a spatially explicit data base of all known sites in National Forests and BLM Districts, and (2) develop species or area management plans, to be implemented under the guidance of the regional botany programs.

Amphibians

Larch Mountain Salamander - Because of the narrow distribution of this species, mostly within the Columbia River Gorge, primary emphasis should be to survey and protect all known sites. Sites must be identified based on fall surveys conducted using a standardized protocol. Known sites are included within boundaries of conservation areas and under these guidelines, are not to be disturbed. Surveys are needed at additional sites in the forest matrix along the Columbia River Gorge. Key habitat is mossy talus protected by overstory canopy. Avoiding any ground-disturbing activity that would disrupt the talus layer where this species occurs is the primary means of protection. Once sites are identified, maintain 40 percent canopy closure of trees within the site and within a buffer of at least the height of one site-potential tree or 100 feet horizontal distance, whichever is greater, surrounding the site. Larger buffer widths are appropriate upslope from protected sites on steep slopes. Partial harvest may be possible if canopy closure can be retained; in such cases logging must be conducted using helicopters or high-lead cable systems to avoid disturbance of the talus layer. The implementation schedule for this species is the same as for survey and manage components 1 and 2.

Siskiyou Mountain Salamander - This species occurs within an extremely narrow range on the Rogue River, Siskiyou, and Klamath National Forests. Its range does not fall within any of the Habitat Conservation Areas identified by the Interagency Scientific Committee in Oregon. Additional surveys conducted using a standardized protocol must be undertaken to delineate range and identify subpopulations. All populations must be protected by delineating an occupied site and avoiding disturbance of talus throughout the site, especially on moist, north-facing slopes, particularly in Oregon where Habitat Conservation Areas do not incorporate species' range. Because this species seems to require cool, moist conditions, a buffer of at least the height of one site-potential tree or 100 feet horizontal distance, whichever is greater, surrounding the site, must be retained around the outer periphery of known sites. Overstory trees must not be removed within the boundary of this buffer. The implementation schedule for this species is the same as for survey and manage components 1 and 2.

Del Norte Salamander - This species occurs in talus slopes protected by overstory canopy that maintains cool, moist conditions on the ground. The species is a slope-valley inhabitant, and sometimes occurs in high numbers near riparian areas. Riparian Reserves, in combination with Late-Successional Reserves and other reserves, will offer some protection to the species but significant numbers also occur in upland areas. Additional mitigation options in this upland matrix include identifying locations (talus areas inhabited by the species) by using a standardized survey protocol, then protecting the location from ground-disturbing activities. Designate a buffer of at least the height of one site-potential tree or 100-foot horizontal distance, whichever is greater, surrounding the location. Within the site and its surrounding buffer, maintain 40 percent canopy closure and avoid any activities that would directly disrupt the surface talus layer. Partial harvest within the buffer may be possible if 40 percent canopy closure can be maintained; in such cases, tree harvest must be conducted using helicopters or high-lead cable systems to avoid compaction or other disturbance of talus. The implementation schedule for this species is the same as for survey and manage components 1 and 2.

Matrix

(Northwest Forest Plan Record of Decision, p. C-45)

Protection Buffers

These standards and guidelines incorporated from the Scientific Analysis Team Report will result in protection for specific species. The following rare and locally endemic species are likely to be assured viability if they occur within designated areas. However, where these species occur in the matrix, the following standards and guidelines will be applied. For the birds listed below, activities that are implemented in 1994 should use this information to the greatest degree possible. Activities implemented in 1995 and later must include these provisions. For the Lynx, implementation should follow the schedule described for survey and manage component 3 (June 11, 1996 change; see page 2-8 in Chapter 2 of this SEIS.)

Birds

White-headed Woodpecker, Black-backed Woodpecker, Pygmy Nuthatch, and Flammulated Owl: These species will not be sufficiently aided by application of mitigation measures for riparian habitat protection or for marbled murrelets alone. They all occur on the periphery of the range of the northern spotted owl on the east slope of the Cascade Range in Washington or Oregon. Additionally, the white-headed woodpecker and flammulated owl occur in the Klamath Province in northwestern California and southwestern Oregon. The viability of all four species within the range of the northern spotted owl was rated as a medium risk on National Forests, although they each are much more widely distributed elsewhere.

Apply the following mitigation standards and guidelines to ensure that the distribution and numbers of all four species do not severely decline on National Forests and BLM Districts within the range of the northern spotted owl. These guidelines apply to the forest matrix outside

designated habitat for the northern spotted owl and Riparian Reserves. Maintain adequate numbers of large snags and green-tree replacements for future snags within the four species' ranges in appropriate forest types. Where feasible, green-tree replacements for future snags can be left in groups to reduce blowdown. Specifically, the Scientific Analysis Team recommends that no snags over 20 inches dbh be marked for cutting. The Scientific Analysis Team recognizes, however, that safety considerations may prevent always retaining all snags. Use of standardized definitions of hazard trees is required. For the longer term, provide for sufficient numbers of green trees to provide for the full (100 percent) population potential of each species.

As depicted by Neitro in *Management of Wildlife and Fish Habitats in Forests of Western Oregon and Washington* (1985), the 100 percent population potential for white-headed woodpeckers is 0.60 conifer snags (ponderosa pine or Douglas-fir) per acre in forest habitats; these snags must be at least 15 inches dbh (or largest available if 15 inch dbh snags are not available) and in soft decay stages, and must be provided in stands of ponderosa pine and mixed pine/Douglas-fir. The 100 percent population potential for black-backed woodpeckers is 0.12 conifer snags per acre in forest habitats; these snags must be at least 17 inches dbh (or largest available if 17-inch dbh snags are not available) and in hard decay stages, and must be provided in stands of mixed conifer and lodgepole pine in higher elevations of the Cascade Range. Provision of snags for other cavity-nesting species, including primary cavity-nesters, must be added to the requirements for these two woodpecker species. Site-specific analysis, and application of a snag recruitment model (specifically, the Forest Service's Snag Recruitment Simulator) taking into account tree species, diameters, falling rates, and decay rates, will be required to determine appropriate tree and snag species mixes and densities. If snag requirements cannot be met, then harvest must not take place.

As identified by the expert panel, black-backed woodpeckers also require beetle-infested trees for foraging; some such trees should be provided in appropriate habitat, and sanitation harvest of all such trees would be detrimental to the species. More information is needed on habitat use, seasonal occurrence, and use of forest age classes and burns, for the black-backed woodpecker.

Pygmy nuthatches use habitat very similar to those of white-headed woodpeckers. Pygmy nuthatches require large trees, typically ponderosa pine within the range of the northern spotted owl, for roosting. Provision of snags for white-headed woodpeckers is assumed to provide for the needs of pygmy nuthatch, as no species-specific guidelines for the species have been developed. Additional information on ecology of pygmy nuthatch within the range of the northern spotted owl is needed to develop more precise standards and guidelines.

Flammulated owls are secondary cavity-nesters and use cavities in snags and live trees that are created by woodpeckers or, less often, that occur naturally. It is assumed that standards and guidelines for snags and green-tree replacements for woodpeckers and other primary cavity-nesting species, as provided by existing National Forest and BLM District Land and Resource Management Plans and for the woodpeckers in this species group, would provide for flammulated owls.

Note: The snag recommendations above are based on the model presented by Neitro and others (1985). In that model, snag requirements for individual species were treated as additive in developing snag requirements for the overall community of cavity excavators. As noted above, "provision of snags for other cavity-nesting species, including primary cavity nesters, must be added to the requirements for these two woodpecker species" (black-backed and white headed woodpeckers).

Snag requirements are developed by the National Forests and BLM Districts for specific forest cover types, and these may be further broken down by geographic location. The intent is to tailor the requirements to those species that are actually expected to occur in an area. To determine if the protection buffer requirements should be added to existing Forest or BLM District Plan requirements, the basis for those existing requirements should be analyzed to determine if they

include the species identified by SAT at the specified level of percent population potential. If they do not, then the SAT requirements must be added to the existing Forest and BLM District Plan requirements.

Mammals

Lynx - Lynx are rare within the range of the northern spotted owl, occurring primarily in the Okanogan area of Washington. The lynx is currently listed by the Fish and Wildlife Service as a Category 2 candidate (a species for which additional information is needed to propose listing as threatened or endangered). A petition was filed to list the lynx as endangered within the northern Cascades of Washington, based on small population size, population isolation, and lack of adequate prey base (snowshoe hare). However, the Fish and Wildlife Service ruled that available information does not warrant listing the lynx in Washington.

Three primary habitat components for lynx are (1) foraging habitat (15 to 35 year old lodgepole pine) to support snowshoe hare and provide hunting cover, (2) denning sites (patches of greater than 200-year old spruce and fir, generally less than 5 acres), and (3) dispersal/travel cover (variable in vegetation composition and structure). The major limiting factor is abundance of snowshoe hare, which in turn is limited by availability of winter habitat (primarily early-successional lodgepole pinewith trees at least 6 feet tall). Past excessive trapping of lynx and incidental mortality of lynx from hunting of other species have depressed populations and may have been detrimental to local lynx populations in Washington. Roads provide access to hunters and trappers and thus road density may be related to lynx mortality.

The reserves and other designated areas in these standards and guidelines will provide denning habitat within protected forest stands in juxtaposition with early-successional vegetation in the forest matrix. Connectivity between many of the denning patches will be provided by the network of buffers along streams under the Riparian Reserves.

In addition, the Scientific Analysis Team proposed development of site-specific timber harvest, roading, and fire management plans in known lynx range. These plans should be developed in consultation with state wildlife agencies and should address: (1) minimizing road construction, closing unused roads, and maintaining roads to the minimum standard possible; (2) using prescribed fire to maintain forage for snowshoe hare in juxtaposition with hunting cover; (3) designating areas as closed to kill trapping of any furbearer to avoid incidental lynx mortality to maintain population refugia for lynx in key areas; (4) planning for kill trapping closure on a wider basis if data indicate a declining lynx population as a result of incidental trapping mortality; and (5) developing and implementing a credible survey and monitoring strategy to determine the distribution of lynx throughout its potential range.

Provide Additional Protection for Caves, Mines, and Abandoned Wooden Bridges and Buildings That are Used as Roost Sites for Bats

(This standard and guideline appears in both the Matrix and Adaptive Management Area land allocation sections (pp. C-43 and D-10 , respectively) of the Northwest Forest Plan Record of Decision.)

Most bat species occurring in the Pacific Northwest roost and hibernate in crevices in protected sites. Suitable roost sites and hibernacula, however, fall within a narrow range of temperature and moisture conditions. Sites commonly used by bats include caves, mines, snags and decadent trees, wooden bridges, and old buildings. Additional provisions for the retention of large snags and decadent trees are included in the standard and guideline for green tree patches in the matrix. Caves, mines, and abandoned wooden bridges and buildings, however, are extremely important roost and hibernation sites, and require additional protection to ensure that their value as habitat is maintained.

This provision is intended to apply in matrix forests and Adaptive Management Areas, and elements such as protection of known occupied caves should be considered for other land allocations. Conduct surveys of crevices in caves, mines, and abandoned wooden bridges and buildings for the presence of roosting bats, including fringed myotis, silver-haired bats, long-eared myotis, long-legged myotis, and pallid bats. For the purposes of this standard and guideline, caves are defined as in the Federal Cave Resources Protection Act of 1988 as “any naturally occurring void, cavity, recess, or system of interconnected passages which occur beneath the surface of the earth or within a cliff or ledge (... but not including any ... man-made excavation) and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or man-made.” Searches should be conducted during the day in the summer (to locate day roosts and maternity colonies), at night during the late summer and fall (to locate night roosts, which are important for reproduction), and during the day in the winter (to locate hibernacula). If bats are found, identify the species using the site and determine for what purpose it is being used by bats. As an interim measure, timber harvest is prohibited within 250 feet of sites containing bats. Management standards and guidelines that may be included as mitigation measures in project or activity plans will be developed for the site. These standards will be developed following an inventory and mapping of resources. The purpose of the standards and guidelines will be protection of the site from destruction, vandalism, disturbance from road construction or blasting, or any other activity that could change cave or mine temperatures or drainage patterns. The size of the buffer, and types of activities allowed within the buffer, may be modified through the standards developed for the specific site. Retention of abandoned bridges or buildings must be made contingent on safety concerns.

Townsend’s big-eared bats are of concern to state wildlife agencies in both Washington and Oregon. These bats are strongly associated with caves, and are extremely sensitive to disturbance, especially from recreational cavers. When Townsend’s big-eared bats are found occupying caves or mines on federal land, the appropriate agency should be notified, and management prescriptions for that site should include special consideration for potential impacts on this species.

Table C-3 on the following pages is from the Northwest Forest Plan Record of Decision, pages C-49 through C-61.

Table C-3. Species to be Protected Through Survey and Manage Standards and Guidelines. Each of the four survey strategies is described in the text [of this Appendix, pp. 9 through 11].

Species	Survey Strategies			
	1	2	3	4
FUNGI				
<u>Mycorrhizal Fungi</u>				
Boletes				
<i>Gastroboletus subalpinus</i>	X		X	
<i>Gastroboletus turbinatus</i>				X
Boletes, low elevation				
<i>Boletus piperatus</i>				X
<i>Tylopilus pseudoscaber</i>	X			X
Rare Boletes				
<i>Boletus haematinus</i>	X			X
<i>Boletus pulcherrimus</i>	X			X
<i>Gastroboletus imbellus</i>	X			X
<i>Gastroboletus ruber</i>	X			X
False Truffles				
<i>Nivatogastrium nubigenum</i>	X			X
<i>Rhizopogon abietis</i>				X
<i>Rhizopogon atroviolaceus</i>				X
<i>Rhizopogon truncatus</i>				X
<i>Thaxterogaster pingue</i>				X
Uncommon False Truffle				
<i>Macowanites chlorinosmus</i>	X			X
Rare False Truffles				
<i>Alpova alexsmithii</i>	X			X
<i>Alpova olivaceotinctus</i>	X			X
<i>Arcangeliella crassa</i>	X			X
<i>Arcangeliella lactarioides</i>	X			X
<i>Destuntzia fusca</i>	X			X
<i>Destuntzia rubra</i>	X			X
<i>Gautieria magnicellaris</i>	X			X
<i>Gautieria otthii</i>	X			X
<i>Leucogaster citrinus</i>	X			X
<i>Leucogaster microsporus</i>	X			X
<i>Macowanites lymanensis</i>	X			X
<i>Macowanites mollis</i>	X			X
<i>Martellia fragrans</i>	X			X
<i>Martellia idahoensis</i>	X			X
<i>Martellia monticola</i>	X			X

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies			
	1	2	3	4
Rare False Truffles (continued)				
<i>Octavianina macrospora</i>			X	X
<i>Octavianina papyracea</i>			X	X
<i>Rhizopogon brunneiniger</i>			X	X
<i>Rhizopogon evadens</i> var. <i>subalpinus</i>			X	X
<i>Rhizopogon exiguus</i>			X	X
<i>Rhizopogon flavofibrillosus</i>			X	X
<i>Rhizopogon inquinatus</i>			X	X
<i>Sedecula pulvinata</i>			X	X
Undescribed Taxa, Rare Truffles & False Truffles				
<i>Alpova</i> sp. nov. #Trappe 9730			X	X
<i>Alpova</i> sp. nov. #Trappe 1966			X	X
<i>Arcangeliella</i> sp. nov. #Trappe 12382			X	X
<i>Arcangeliella</i> sp. nov. #Trappe 12359			X	X
<i>Chamonixia pacifica</i> sp. nov. #Trappe 12768			X	X
<i>Elasomyces</i> sp. nov. #Trappe 1038			X	X
<i>Gastroboletus</i> sp. nov. #Trappe 2897			X	X
<i>Gastroboletus</i> sp. nov. #Trappe 7515			X	X
<i>Gastrosuillus</i> sp. nov. #Trappe 7516			X	X
<i>Gastrosuillus</i> sp. nov. #Trappe 9608			X	X
<i>Gymnomyces</i> sp. nov. #Trappe 4703, 5576			X	X
<i>Gymnomyces</i> sp. nov. #Trappe 5052			X	X
<i>Gymnomyces</i> sp. nov. #Trappe 1690,1706,1710			X	X
<i>Gymnomyces</i> sp. nov. #Trappe 7545			X	X
<i>Hydnotrya</i> sp. nov. #Trappe 787, 792			X	X
<i>Hydnotrya subnix</i> sp. nov. #Trappe 1861			X	X
<i>Martellia</i> sp. nov. #Trappe 649			X	X
<i>Martellia</i> sp. nov. #Trappe 1700			X	X
<i>Martellia</i> sp. nov. #Trappe 311			X	X
<i>Martellia</i> sp. nov. #Trappe 5903			X	X
<i>Octavianina</i> sp. nov. #Trappe 7502			X	X
<i>Rhizopogon</i> sp. nov. #Trappe 9432			X	X
<i>Rhizopogon</i> sp. nov. #Trappe 1692			X	X
<i>Rhizopogon</i> sp. nov. #Trappe 1698			X	X
<i>Thaxterogaster</i> sp. nov. #Trappe 4867,6242,7427,7962,8520			X	X
<i>Tuber</i> sp. nov. #Trappe 2302			X	X
<i>Tuber</i> sp. nov. #Trappe 12493			X	X
Rare Truffles				
<i>Balsamia nigra</i>			X	X
<i>Choiromyces alveolatus</i>			X	X

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies			
	1	2	3	4
Rare Truffles (continued)				
<i>Choiromyces venosus</i>	X		X	
<i>Elaphomyces anthracinus</i>	X		X	
<i>Elaphomyces subviscidus</i>	X		X	
Chanterelles				
<i>Cantharellus cibarius</i>			X	X
<i>Cantharellus subalbidus</i>			X	X
<i>Cantharellus tubaeformis</i>			X	X
Chanterelles - Gomphus				
<i>Gomphus bonarii</i>			X	
<i>Gomphus clavatus</i>			X	
<i>Gomphus floccosus</i>			X	
<i>Gomphus kauffmanii</i>			X	
Rare Chanterelle				
<i>Cantharellus formosus</i>	X		X	
<i>Polyozellus multiplex</i>	X		X	
Uncommon Coral Fungi				
<i>Ramaria abietina</i>			X	
<i>Ramaria araiospora</i>	X		X	
<i>Ramaria botryis</i> var. <i>aurantiiramosa</i>	X		X	
<i>Ramaria concolor</i> f. <i>tsugina</i>			X	
<i>Ramaria coulterae</i>			X	
<i>Ramaria fasciculata</i> var. <i>sparsiramosa</i>	X		X	
<i>Ramaria gelatiniaurantia</i>	X		X	
<i>Ramaria largentii</i>	X		X	
<i>Ramaria rubella</i> var. <i>blanda</i>	X		X	
<i>Ramaria rubrievanescens</i>	X		X	
<i>Ramaria rubripermanens</i>	X		X	
<i>Ramaria suecica</i>			X	
<i>Ramaria thiersii</i>	X		X	
Rare Coral Fungi				
<i>Ramaria amyloidea</i>	X		X	
<i>Ramaria aurantiisiccescens</i>	X		X	
<i>Ramaria celerivirescens</i>	X		X	
<i>Ramaria claviramulata</i>	X		X	
<i>Ramaria concolor</i> f. <i>marri</i>	X		X	
<i>Ramaria cyaneigranosa</i>	X		X	

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies			
	1	2	3	4
Rare Coral Fungi (continued)				
<i>Ramaria hilaris</i> var. <i>olympiana</i>	X		X	
<i>Ramaria lorithamnus</i>	X		X	
<i>Ramaria maculatipes</i>	X		X	
<i>Ramaria rainierensis</i>	X		X	
<i>Ramaria rubribrunnescens</i>	X		X	
<i>Ramaria stuntzii</i>	X		X	
<i>Ramaria verlotensis</i>	X		X	
<i>Ramaria gracilis</i>	X		X	
<i>Ramaria spinulosa</i>	X		X	
Phaeocollybia				
<i>Phaeocollybia attenuata</i>				X
<i>Phaeocollybia californica</i>	X			X
<i>Phaeocollybia carmanahensis</i>	X			X
<i>Phaeocollybia dissiliens</i>	X			X
<i>Phaeocollybia fallax</i>				X
<i>Phaeocollybia gregaria</i>	X			X
<i>Phaeocollybia kauffmanii</i>	X			X
<i>Phaeocollybia olivacea</i>				X
<i>Phaeocollybia oregonensis</i>	X			X
<i>Phaeocollybia piceae</i>	X			X
<i>Phaeocollybia pseudofestiva</i>				X
<i>Phaeocollybia scatesiae</i>	X			X
<i>Phaeocollybia sipei</i>	X			X
<i>Phaeocollybia spadicea</i>				X
Uncommon Gilled Mushrooms				
<i>Catathelasma ventricosa</i>				X
<i>Cortinarius azureus</i>				X
<i>Cortinarius boulderensis</i>	X			X
<i>Cortinarius cyanites</i>				X
<i>Cortinarius magnivelatus</i>	X			X
<i>Cortinarius olympianus</i>	X			X
<i>Cortinarius spilomius</i>				X
<i>Cortinarius tabularis</i>				X
<i>Cortinarius valgus</i>				X
<i>Dermocybe humboldtensis</i>	X			X
<i>Hebeloma olympiana</i>	X			X
<i>Hygrophorus caeruleus</i>	X			X
<i>Hygrophorus karstenii</i>				X
<i>Hygrophorus vernalis</i>	X			X

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies			
	1	2	3	4
Rare-Gilled Mushrooms				
<i>Russula mustelina</i>			X	
<i>Chroogomphus loculatus</i>	X		X	
<i>Cortinarius canabarba</i>	X		X	
<i>Cortinarius rainierensis</i>	X		X	
<i>Cortinarius variipes</i>	X		X	
<i>Cortinarius verrucisporus</i>	X		X	
<i>Cortinarius wiebeae</i>	X		X	
<i>Tricholoma venenatum</i>	X		X	
Uncommon Ecto-Polypores				
<i>Albatrellus ellisii</i>				X
<i>Albatrellus flettii</i>				X
Rare Ecto-Polypores				
<i>Albatrellus avellaneus</i>	X		X	
<i>Albatrellus caeruleoporus</i>	X		X	
Tooth Fungi				
<i>Hydnum repandum</i>				X
<i>Hydnum umbilicatum</i>				X
<i>Phellodon atratum</i>				X
<i>Sarcodon fuscoindicum</i>				X
<i>Sarcodon imbricatus</i>				X
Rare Zygomycetes				
<i>Endogone acrogena</i>	X		X	
<i>Endogone oregonensis</i>	X		X	
<i>Glomus radiatum</i>	X		X	
Saprobies (Decomposers)				
Uncommon Gilled Mushrooms				
<i>Baeospora myriadophylla</i>				X
<i>Chrysomphalina grossula</i>				X
<i>Collybia bakerensis</i>	X		X	
<i>Fayodia gracilipes (rainierensis)</i>				X
<i>Gymnopilus puntifolius</i>	X		X	
<i>Marasmius applanatipes</i>	X		X	
<i>Mycena hudsoniana</i>	X		X	
<i>Mycena lilacifolia</i>				X
<i>Mycena marginella</i>				X
<i>Mycena monticola</i>	X		X	

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies			
	1	2	3	4
Uncommon Gilled Mushrooms (continued)				
<i>Mycena overholtsii</i>	X		X	
<i>Mycena quinaultensis</i>	X		X	
<i>Mycena tenax</i>			X	
<i>Mythicomycetes corneipes</i>			X	
<i>Neolentinus kauffmanii</i>	X		X	
<i>Pholiota albivelata</i>	X		X	
<i>Stagnicola perplexa</i>			X	
Rare Gilled Mushrooms				
<i>Clitocybe subditopoda</i>	X		X	
<i>Clitocybe senilis</i>	X		X	
<i>Neolentinus adherens</i>	X		X	
<i>Rhodocybe nitida</i>	X		X	
<i>Rhodocybe speciosa</i>	X		X	
<i>Tricholomopsis fulvescens</i>	X		X	
Noble Polypore (rare and endangered)				
<i>Oxyporus nobilissimus</i>	X	X	X	
Bondarzewia Polypore				
<i>Bondarzewia montana</i>	X	X	X	
Rare Resupinates and Polypores				
<i>Aleurodiscus farlowii</i>	X		X	
<i>Dichostereum granulatum</i>	X		X	
Uncommon Cup Fungi [Additional header added; not in original ROD]				
<i>Cudonia monticola</i>			X	
<i>Gyromitra californica</i>			X	X
<i>Gyromitra esculenta</i>			X	X
<i>Gyromitra infula</i>			X	X
<i>Gyromitra melaleucooides</i>			X	X
<i>Gyromitra montana</i> (syn. <i>G. gigas</i>)			X	X
<i>Otidea leporina</i>	X		X	
<i>Otidea onotica</i>	X		X	
<i>Otidea smithii</i>	X		X	
<i>Plectania melastoma</i>			X	
<i>Podostroma alutaceum</i>			X	
<i>Sarcosoma mexicana</i>			X	
<i>Sarcosphaera eximia</i>			X	
<i>Spathularia flavida</i>			X	

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Table C-3. (Continued)

Species	Survey Strategies			
	1	2	3	4
Rare Cup Fungi				
<i>Aleuria rhenana</i> ["x's" not in original ROD]	X		X	
<i>Bryoglossum gracile</i> ["x's" not in original ROD]	X		X	
<i>Gelatinodiscus flavidus</i> ["x's" not in original ROD]	X		X	
<i>Helvella compressa</i>	X		X	
<i>Helvella crassitunicata</i>	X		X	
<i>Helvella elastica</i>	X		X	
<i>Helvella maculata</i>	X		X	
<i>Neournula pouchetii</i>	X		X	
<i>Pithya vulgaris</i>	X		X	
<i>Plectania latahensis</i>	X		X	
<i>Plectania milleri</i>	X		X	
<i>Pseudaleuria quinaultiana</i>	X		X	
Club Coral Fungi				
<i>Clavariadelphus ligula</i>			X	X
<i>Clavariadelphus pistilaris</i>			X	X
<i>Clavariadelphus truncatus</i>			X	X
<i>Clavariadelphus borealis</i>			X	X
<i>Clavariadelphus lovejoyae</i>			X	X
<i>Clavariadelphus sachalinensis</i>			X	X
<i>Clavariadelphus subfastigiatus</i>			X	X
Jelly Mushroom				
<i>Phlogoitis helvelloides</i>			X	X
Branched Coral Fungi				
<i>Clavulina cinerea</i>			X	X
<i>Clavulina cristata</i>			X	X
<i>Clavulina ornatipes</i>			X	X
Mushroom Lichen				
<i>Phytoconis ericetorum</i>			X	X
Parasitic Fungi				
<i>Asterophora lycoperdoides</i>			X	
<i>Asterophora parasitica</i>			X	
<i>Collybia racemosa</i>			X	
<i>Cordyceps capitata</i>			X	
<i>Cordyceps ophioglossoides</i>			X	
<i>Hypomyces luteovirens</i>			X	

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies			
	1	2	3	4
Cauliflower Mushroom				
<i>Sparassis crispa</i>				X
Moss Dwelling Mushrooms				
<i>Cyphellostereum laeve</i>				X
<i>Galerina atkinsoniana</i>				X
<i>Galerina cerina</i>				X
<i>Galerina heterocystis</i>				X
<i>Galerina sphagnicola</i>				X
<i>Galerina vittaeformis</i>				X
<i>Rickenella setipes</i>				X
Coral Fungi				
<i>Clavicornia avellanea</i>				X
LICHENS				
Rare Forage Lichen				
<i>Bryoria tortuosa</i>	X			X
Rare Leafy (arboreal) Lichens				
<i>Hypogymnia duplicata</i>	X	X		X
<i>Tholurna dissimilis</i>	X			X
Rare Nitrogen-fixing Lichens				
<i>Dendroscopium intricatum</i>	X			X
<i>Lobaria hallii</i>	X			X
<i>Lobaria linita</i>	X	X		X
<i>Nephroma occultum</i>	X			X
<i>Pannaria rubiginosa</i>	X			X
<i>Pseudocyphellaria rainierensis</i>	X	X		X
Nitrogen-fixing Lichens				
<i>Lobaria oregana</i>				X
<i>Lobaria pulmonaria</i>				X
<i>Lobaria scrobiculata</i>				X
<i>Nephroma bellum</i>				X
<i>Nephroma helveticum</i>				X
<i>Nephroma laevigatum</i>				X
<i>Nephroma parile</i>				X
<i>Nephroma resupinatum</i>				X
<i>Pannaria leucostictoides</i>				X
<i>Pannaria mediterranea</i>				X

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued))

Species	Survey Strategies			
	1	2	3	4
Nitrogen-fixing Lichens (continued)				
<i>Pannaria saubinetii</i>				X
<i>Peltigera collina</i>				X
<i>Peltigera neckeri</i>				X
<i>Peltigera pacifica</i>				X
<i>Pseudocyphellaria anomala</i>				X
<i>Pseudocyphellaria anthraspis</i>				X
<i>Pseudocyphellaria crocata</i>				X
<i>Sticta beauvoisii</i>				X
<i>Sticta fuliginosa</i>				X
<i>Sticta limbata</i>				X
Pin Lichens				
<i>Calicium abietinum</i>				X
<i>Calicium adaequatum</i>				X
<i>Calicium adspersum</i>				X
<i>Calicium glaucellum</i>				X
<i>Calicium viride</i>				X
<i>Chaenotheca brunneola</i>				X
<i>Chaenotheca chrysocephala</i>				X
<i>Chaenotheca ferruginea</i>				X
<i>Chaenotheca furfuracea</i>				X
<i>Chaenotheca subroscida</i>				X
<i>Chaenothecopsis pusilla</i>				X
<i>Cyphelium inquinans</i>				X
<i>Microcalicium arenarium</i>				X
<i>Mycocalicium subtile</i>				X
<i>Stenocybe clavata</i>				X
<i>Stenocybe major</i>				X
Rare Rock Lichens				
<i>Pilophorus nigricaulis</i>	X		X	
<i>Sticta arctica</i>	X		X	
Riparian Lichens				
<i>Cetrelia cetrarioides</i>				X
<i>Collema nigrescens</i>				X
<i>Leptogium burnetiae</i> var. <i>hirsutum</i>				X
<i>Leptogium cyanescens</i>				X
<i>Leptogium saturninum</i>				X
<i>Leptogium teretiusculum</i>				X
<i>Platismatia lacunosa</i>				X

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies			
	1	2	3	4
Riparian Lichens (continued)				
<i>Ramalina thrausta</i>				X
<i>Usnea longissima</i>				X
Aquatic Lichens				
<i>Dermatocarpon luridum</i>	X		X	
<i>Hydrothyria venosa</i>	X		X	
<i>Leptogium rivale</i>	X		X	
Rare Oceanic Influenced Lichens				
<i>Bryoria pseudocapillaris</i>	X		X	
<i>Bryoria spiralifera</i>	X		X	
<i>Bryoria subcana</i>	X		X	
<i>Buellia oidalea</i>	X		X	
<i>Erioderma solediatum</i>	X		X	
<i>Hypogymnia oceanica</i>	X		X	
<i>Leioderma solediatum</i>	X		X	
<i>Leptogium brebissonii</i>	X		X	
<i>Niebla cephalota</i>	X		X	
<i>Pseudocyphellaria mougeotiana</i>	X		X	
<i>Teloschistes flavicans</i>	X		X	
<i>Usnea hesperina</i>	X		X	
Oceanic Influenced Lichens				
<i>Cetraria californica</i>	X		X	
<i>Heterodermia leucomelos</i>	X		X	
<i>Loxospora</i> sp. nov. "corallifera" (Brodo in edit)	X		X	
<i>Pyrrhospora quernea</i>	X		X	
Additional Lichen Species				
<i>Cladonia norvegica</i>				X
<i>Heterodermia sitchensis</i>				X
<i>Hygomnia vittata</i>				X
<i>Hypotrachyna revoluta</i>				X
<i>Ramalina pollinaria</i>				X
<i>Nephroma isidiosum</i>				X
Bryophytes				
<i>Antitrichia curtipenula</i>				X
<i>Bartramiopsis lescurii</i>	X		X	
<i>Brotherella roelli</i>	X		X	

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies			
	1	2	3	4
<u>Bryophytes</u> (continued)				
<i>Diplophyllum albicans</i> [“ <i>Diplophyllu albicans</i> ” in original ROD; corrected typographical error]]	x		x	
<i>Diplophyllum plicatum</i>	x	x		
<i>Douinia ovata</i>				x
<i>Encalypta brevicolla</i> var. <i>crumiana</i>	x		x	
<i>Herbertus aduncus</i>	x		x	
<i>Herbertus sakurali</i>	x		x	
<i>Iwatsuklella leucotricha</i>	x		x	
<i>Kurzia makinoana</i>	x	x		
<i>Marsupella emarginata</i> var. <i>aquatica</i>	x	x		
<i>Orthodontium gracile</i> [Corrected spelling; was “ <i>Orthodontlum gracile</i> ” in original ROD]	x		x	
<i>Plagiochila satoi</i> [Corrected spelling; was “ <i>Plagiochila satol</i> ” in original ROD]	x		x	
<i>Plagiochila semidecurrens</i>	x		x	
<i>Pleuroziopsis ruthenica</i>	x		x	
<i>Ptilidium californicum</i>	x	x		
<i>Racomitrium aquaticum</i>	x		x	
<i>Radula brunnea</i>	x		x	
<i>Scouleria marginata</i>				x
<i>Tetraphis geniculata</i>	x		x	
<i>Tritomaria exsectiformis</i>	x	x		
<i>Tritomaria quinquedentata</i>	x		x	
<u>Amphibians</u>				
Del Norte salamander			x	
Larch Mountain salamander			x	
Shasta salamander	x	x		
Siskiyou Mountains salamander	x	x		
Van Dyke’s salamander (Cascades)			x	
<u>Mammals</u>				
Red tree vole (<i>P. longicaudus</i>)			x	
<u>Mollusks</u>				
<i>Cryptomastix devia</i>	x	x		
<i>Cryptomastix hendersoni</i>	x	x		
<i>Helminthoglypta hertleini</i>	x	x		
<i>Helminthoglypta talmadgei</i>	x	x		
<i>Megomphix hemphilli</i>	x	x		
<i>Monadenia chaceana</i>	x	x		

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies			
	1	2	3	4
<u>Mollusks (continued)</u>				
<i>Monadenia churchi</i>	X	X		
<i>Monadenia fidelis minor</i>	X	X		
<i>Monadenia troglodytes troglodytes</i>	X	X		
<i>Monadenia troglodytes wintu</i>	X	X		
<i>Oreohelix</i> n. sp.	X	X		
<i>Pristiloma articum crateris</i>	X	X		
<i>Trilobopsis roperi</i>	X	X		
<i>Trilobopsis tehamana</i>	X	X		
<i>Vertigo</i> n. sp.	X	X		
<i>Vespericola pressleyi</i>	X	X		
<i>Vespericola shasta</i>	X	X		
<i>Deroceras hesperium</i>	X	X		
<i>Hemphillia burringtoni</i> [Corrected spelling; was “ <i>Hemphillia barringtoni</i> ” in original ROD]	X	X		
<i>Hemphillia glandulosa</i>	X	X		
<i>Hemphillia malonei</i>	X	X		
<i>Hemphillia pantherina</i>	X	X		
<i>Prophysaon coeruleum</i>	X	X		
<i>Prophysaon dubium</i>	X	X		
<i>Fluminicola</i> n. sp. 1	X	X		
<i>Fluminicola</i> n. sp. 11	X	X		
<i>Fluminicola</i> n. sp. 14	X	X		
<i>Fluminicola</i> n. sp. 15	X	X		
<i>Fluminicola</i> n. sp. 16	X	X		
<i>Fluminicola</i> n. sp. 17	X	X		
<i>Fluminicola</i> n. sp. 18	X	X		
<i>Fluminicola</i> n. sp. 19	X	X		
<i>Fluminicola</i> n. sp. 2	X	X		
<i>Fluminicola</i> n. sp. 20	X	X		
<i>Fluminicola</i> n. sp.	X	X		
<i>Fluminicola seminalis</i>	X	X		
<i>Juga</i> (O.) n. sp. 2	X	X		
<i>Juga</i> (O.) n. sp. 3	X	X		
<i>Lyogyrus</i> n. sp. 1	X	X		
<i>Lyogyrus</i> n. sp. 2	X	X		
<i>Lyogyrus</i> n. sp. 3	X	X		
<i>Vorticifex klamathensis sinitsini</i>	X	X		
<i>Vorticifex</i> n. sp. 1	X	X		

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

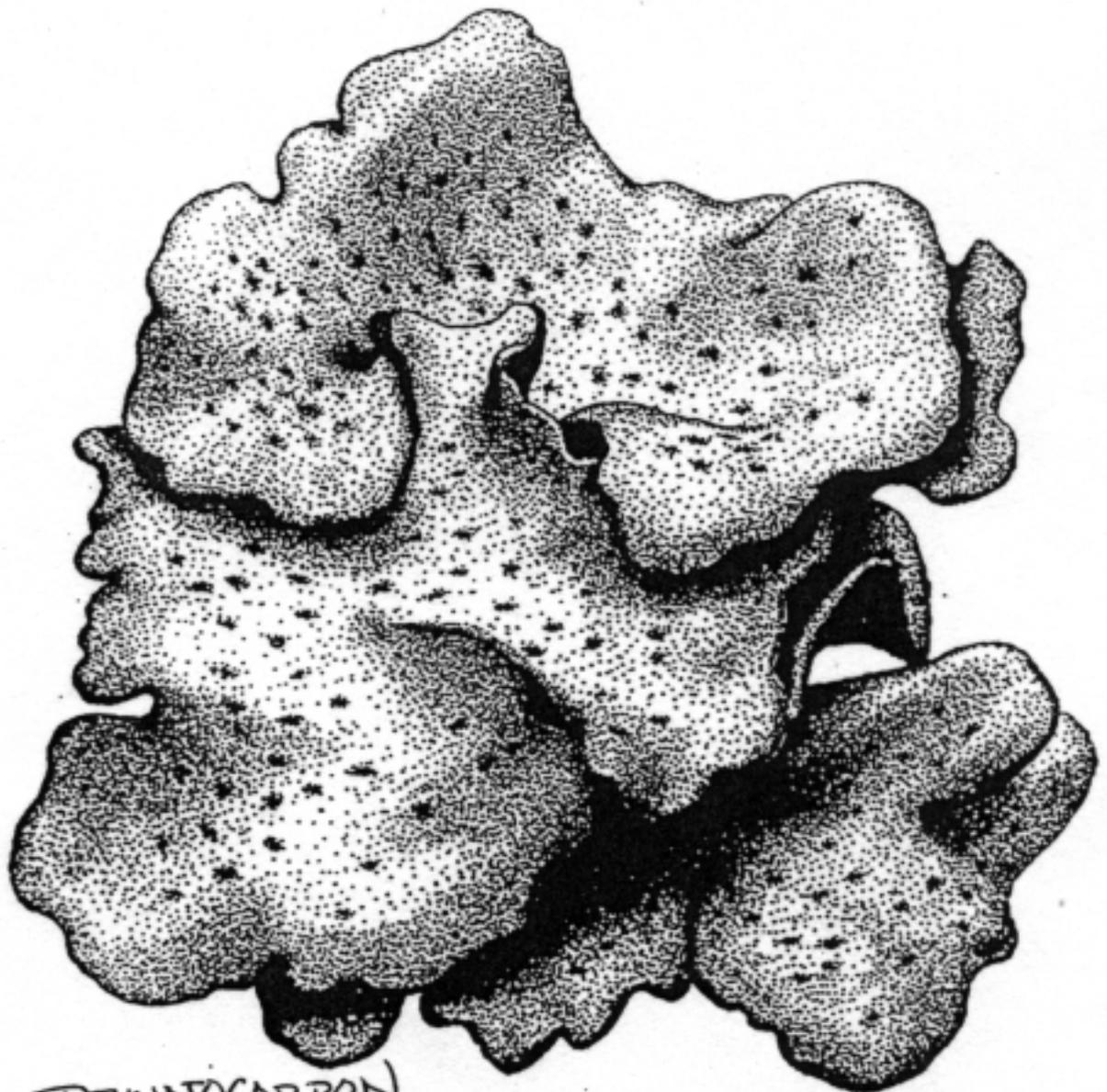
Table C-3. (continued)

Species	Survey Strategies			
	1	2	3	4
<u>Vascular Plants</u>				
<i>Allotropa virgata</i>	X	X		
<i>Arceuthobium tsugense</i> subsp. <i>mertensiana</i> [change from original ROD;IB#OR-95-443]				X
<i>Aster vialis</i>	X	X		
<i>Bensoniella oregana</i> (California)	X	X		
<i>Botrychium minganense</i>	X	X		
<i>Botrychium montanum</i>	X	X		
<i>Clintonia andrewsiana</i>	X	X		
<i>Coptis asplenifolia</i>	X	X		
<i>Coptis trifolia</i>	X	X		
<i>Corydalis aquae-gelidae</i>	X	X		
<i>Cypripedium fasciculatum</i> (Klamath)	X	X		
<i>Cypripedium montanum</i> (west Cascades)	X	X		
<i>Galium kamtschaticum</i>	X	X		
<i>Habenaria orbiculata</i>	X	X		
<i>Pedicularis howellii</i> [This species was in original ROD twice.]	X	X		
<i>Scoliopus biglovei</i>	X	X		
<u>Arthropods</u>				
Canopy herbivores (south range)				X
Coarse wood chewers (south range)				X
Litter and soil dwelling species (south range)				X
Understory and forest gap herbivores (south range) [limit to south range; IB#OR-97-045]				X

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites;
3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Appendix C

Survey and Manage Accomplishments (1994-2000)



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Appendix C

Survey and Manage Accomplishments (1994-2000)

The following accomplishment report is an updated version of the report included in the appendices to the Environmental Assessment to Change the Implementation Schedule for Survey and Manage and Protection Buffer Species (February 26, 1999).

In November 1994, the Regional Interagency Executive Committee (RIEC) chartered an Interagency Survey and Manage workgroup. This workgroup operates under the purview of the Regional Ecosystem Office, and is guided by an Intermediate Managers Group with regional-level management representatives of the BLM, Forest Service (Regions 5, 6, and Pacific Northwest Research Station), and U.S. Fish and Wildlife.

The main purposes of the workgroup are to: (1) develop a database on species locations; (2) prepare Management Recommendations for species in Categories 1 and 2; (3) prepare Survey Protocols for Category 2 species; and, (4) prepare procedures for addressing species in Categories 3 and 4. This work and other Survey and Manage efforts are discussed below. In addition, because of their similar information needs, the Protection Buffer species were added to the workgroup's purview. The workgroup consists of approximately 50 agency experts and program managers in the various taxonomic groups.

Database on Species Locations: In 1994-1995, data on locations of all Category 1 Survey and Manage species was widely collected. The data came from agency files of the BLM, Forest Service, and the National Park Service, as well as from several experts contracted to gather information from herbaria, museums, and private collections located across the country that were thought to have the major holdings of Northwest species. Nearly 8,000 records of variable quality and precision were collected; about 2,000 (25 percent) had location information sufficient to locate the species. A database containing the collected information was developed and distributed to field units of the BLM and Forest Service to be used in project planning and managing any of the known sites located in proposed project areas.

Location descriptions ranged from vague locations (such as mountains, trails, rivers, or even just name of the state), and legal descriptions with smaller units (but not usually finer than approximately 0.25 mile), to accurately located sites indicated by crossings or maps. Because one main purpose of Category 1 is to use the "known site" information to design or modify activities, the location information needs to be precise. The Northwest Forest Plan Record of Decision (USDA, USDI 1994b, p. C-4) suggests using a Geographic Information System (GIS) to compile the locations of species. However, spatial depiction of a site requires points or boundaries of the site, which were not generally available, especially from herbarium and museum records.

The data was reviewed and located as finely as possible by looking at aerial photos and topographic maps to follow features identified on data sheets or collection labels. The categories in the "precision" field of the database were identical to those used by the state heritage programs, with the two finest being to the second (approximately 150 feet) and minute (approximately 1.5 miles) of latitude-longitude. The 1.5-mile range was determined to be too indefinite of an area to use for planning projects; consequently, the sites known to approximately 150 feet were identified as "known sites."

All sites of species where fewer than 10 sites were known were considered "exception" sites and identified as "known sites" for protection. Although these sites were broadly identified, loss of them was considered harmful to the species persistence. Version 1.0 of Known Sites Database

was transmitted to the field in July 1995 (see Appendix D). That database version consisted of only those sites considered as “known sites” such that points could be entered in local GIS themes for project planning.

All data collected, regardless of its precision, were compiled and included in Version 2.0 Known Sites Database, which was transmitted to the field in May 1997. Some problems were identified with this version in updating the database for all field units and in sorting some types of data. Currently, a more useful database has been developed, the Interagency Species Management System (ISMS). It contains all the data in the Known Sites Database plus data collected since its last update. Appendix D has more information on ISMS. The ISMS is designed to store all species-specific data at a central point accessible in real-time by field staff of the BLM and the Forest Service. The ISMS is expected to be fully operational during the year 2000. Data about Survey and Manage species and their habitats will be managed in ISMS on all Survey and Manage species.

Management Recommendations: The workgroup gathered known information on each of the 274 Category 1 and 2 and Protection Buffer species to draft Management Recommendations. These documents are considered the most complete single source of information on most of these species. Management Recommendations are completed for 263 of these species. Of the 11 not completed, seven are being revised or edited by the Regional Ecosystem Office (REO) in preparation for review; management direction is given in the Protection Buffer Standards and Guidelines for 1 species; and the remaining 3 are proposed to be removed from the Survey and Manage Standards and Guidelines in the action alternatives in this SEIS. If this does not happen, Management Recommendations will be prepared.

Survey Protocols: The same team members who are developing Management Recommendations have also developed Survey Protocols for all species that are Category 2 species, Protection Buffer species, or other species whose standards and guidelines require protocols. For more detail on the status of Management Recommendations and Survey Protocols, reference Table 2-1 in Chapter 2 of this SEIS. Survey Protocols were prepared and distributed to the field in time to initiate surveys in 1995 for the great gray owl and prior to 1997 for habitat-disturbing activities as identified in the Northwest Forest Plan Record of Decision for the red tree vole and five amphibians. In March 2000, subsequent to a 1999 court ruling, the Red Tree Vole Survey Protocol was rewritten and was distributed for field use.

The Agencies have provided extensive training to field personnel in survey techniques and identification of these species. Both in-house personnel and contractors have presented training throughout the region, provided species identification and technical advice to field personnel, and assisted in preparing field guides and other documents.

General Regional and Extensive Surveys: An Interagency Bryologist-Lichenologist and an Interagency Regional Mycologist were hired to direct the survey efforts for taxa in Categories 3 and 4, provide technical advice to the Agencies, and present training to field staff. Workgroups focusing on Category 3 and 4 species of bryophytes, lichens, and fungi have prepared a work plan and are surveying for these species, starting with those that appear to be at greatest risk. The approach is to revisit known sites and characterize the habitat to guide surveys to appropriate habitat. Since survey initiation, nearly 30,000 acres have been directly surveyed by these teams. Researchers at the USDA Pacific Northwest Research Station (PNW) and Pacific Southwest Research Laboratory (PSW) have developed and initiated general regional surveys for two of the arthropod guilds. Surveys for the other two guilds will be phased in with a planned initiation of 2002.

In 2000, landscape-level surveys are being designed and implemented as described for Extensive and General Regional Surveys from the 1994 Record of Decision and as described for strategic surveys in this SEIS. A landscape-level survey framework plan is also being developed (expected completion late 2000). Elements of the framework plan include: (1) multispecies sampling on randomly selected plots in a pre-established grid system; (2) revisits to known sites to better

characterize the present habitat characteristics to aid in focusing future surveys and in recommending the range of habitat management; and, (3) focused surveys in appropriate conditions seeking occurrences of particular species. This approach expands the efforts undertaken in 1996 in the implementation of Category 3 and 4 surveys.

Specific accomplishments include the following:

Years 1996-1999 - With initial Survey and Manage efforts having put databases, Management Recommendations, and Survey Protocols in place for most species, and management of known sites and pre-disturbance surveys on schedule (as amended), extensive and general regional surveys (Components 3 and 4 respectively) were initiated in 1996. Two sub-teams, a regional Fungal Survey Team and a regional Lichen/Bryophyte Survey Team were formed to conduct these surveys because these taxa contained the overwhelming majority of species in these two components, about 285 species. The teams collected considerable new information on distribution and habitat requirements for several species and planned to spend several more years completing efforts on the entire list of species. Organization of general regional surveys for arthropods also started in 1996 for two of the four arthropod guilds, with the first field work in 1997. The arthropod surveys use a research-based experimental approach to examine the effects of disturbance (thinning and fire) on arthropod diversity and function. These disturbance effects were the primary concerns for arthropod persistence in the southern provinces of the Northwest Forest Plan.

Year 2000 - As work progressed on this SEIS in 1999, the six categories of Alternative 1 (the preferred alternative) and their defining criteria were proposed. Further, known information about each species was compiled and the Species Review Process (see Appendix F) was conducted to assign each species to a category or recommend them for removal from Survey and Manage. These efforts highlighted the importance of data from extensive and general regional surveys. The differences between the categories immediately helped to focus the specific questions that most needed to be answered for each species or species group. This focus resulted in a substantial increase in extensive and general regional surveys, now grouped as strategic surveys in fiscal year 2000.

Surveys in fiscal year 2000 built upon work from previous years and added new methods, depending upon the questions to be answered for each species and category. Each method is designed to meet scientific credibility, efficiency, and appropriate levels of statistical rigor. The Agencies allocated over \$4 million to strategic surveys in fiscal year 2000. Efforts, which continue to be built upon in fiscal year 2001, included:

Random Grid Projects: Two ongoing random grid projects are designed to find additional occupied sites for many Survey and Manage species. For these projects, a statistically valid random sample of 1/2-acre survey plots is selected from among existing long-term forest inventory plots already uniformly distributed throughout federally managed lands in the Northwest Forest Plan area. The data will immediately contribute to answers about the distribution of species and, with analysis, it may also answer questions about the relationship of these species with particular habitat conditions. The first random grid project, in California, has conducted surveys for 11 species at 270 plots. This data can be combined with data from similar surveys conducted in 1999.

The second random grid project involves three areas, with 100 sample plots at each area (total of 300 plots). The project areas are: the Oregon Coast Range federal lands, the Gifford Pinchot National Forest, and federal lands in the Umpqua Basin. Sampling for all lichens, bryophytes and vascular plants on Survey and Manage is being conducted at each plot. Because of limitations on survey seasons, fungi and mollusk surveys are being conducted on 70 of these plots in each area (total of 210 plots).

Known Sites Surveys: Known Sites Surveys have been implemented in fiscal year 2000 and are similar to work done in previous years for Survey and Manage Component 3 and 4

lichens, bryophytes, and fungi. The work has three facets. First, already-documented locations of Survey and Manage species are revisited to confirm their existence at the sites. Then, an intensive vegetation/habitat data collection is performed. This data contributes to the design of habitat models and also provides information to develop better Survey Protocols and Management Recommendations. The final step is to search the surrounding area in an attempt to locate additional sites of the target species. As of September 2000, standardized data has been collected at 59 locations of 15 species of lichens and 9 locations of 1 species of bryophytes.

Red Tree Vole: Red tree vole work in fiscal year 2000 consists of five different projects. An analysis of spotted owl casting pellets will corroborate red tree vole range and distribution. A genetics lab is exploring the isolation of red tree vole genes for potential use in questions of population isolation and identification of priority sites. In the Umpqua Basin, randomly-selected forest inventory plots serve as the locations of habitat studies and red tree vole population occurrence. Selected “known sites” are being visited to learn about red tree vole persistence at a site and habitat associations. Finally, a project on the Klamath National Forest is investigating red tree vole occurrence at random forest inventory sites and is looking at habitat associations of the species. A comparable level of study will continue in fiscal year 2001.

Amphibians: A strategic survey project targeting Del Norte and Siskiyou Mountain salamanders was implemented to survey random forest inventory plots inside reserves. Thorough species searches and habitat characterizations were completed for 135 plots in fiscal year 2000 and surveys have begun at another 22 plots.

Habitat Modeling: Under the strategic survey efforts, a team has initiated the use of existing Potential Natural Vegetation mapping and Plant Association Guides to model habitat for five Survey and Manage species. This work uses vegetation data to project where the species should occur, then surveys those locations to determine if the projection was correct. This modeling work builds from the known sites work described above.

Synthesizing data from related efforts: The strategic survey work is reviewing data collected in other efforts to learn from those projects. The best example is the numerous known sites of Survey and Manage lichen species incidentally documented during air quality studies.

Individual field units: Finally, individual field units have contracted for fungi and other surveys. The results of these surveys have been added to the ISMS database and incorporated into ongoing strategic survey planning. These surveys include fungi surveys in northern California and Salem District of BLM, and mollusk surveys at Coos Bay BLM, for example.

Communications: To facilitate sharing information with the public and with other agencies, a website managed by the BLM provides documents prepared by both the BLM and the Forest Service. The website may be found at: <http://www.or.blm.gov/nwfp.htm/>. Among the various planning documents available on the internet site are the Record of Decision and Standards and Guidelines for the Northwest Forest Plan FSEIS (USDA, USDI 1994b), the Environmental Assessment to Change the Implementation Schedule for Survey and Manage and Protection Buffer Species and the Finding of No Significant Impact (February 26, 1999) and the Findings and Plan Maintenance documents extending the date for seven species covered by the February 26, 1999, decision (March 2000). All BLM memoranda (including interagency memoranda) pertaining to Survey and Manage Management Recommendations and Survey Protocols, as well as copies of all Management Recommendations and Survey Protocol documents, are also available soon after their release. See <http://www.or.blm.gov/surveyandmanage/>. This website also includes Field Guides to Terrestrial and to Freshwater Aquatic Mollusks.

Management Changes: In the process of researching the Survey and Manage species, justifications were also prepared to move species between categories and to correct errors in the standards and guidelines. These justifications followed the process identified on page C-6 of the Northwest Forest Plan Record of Decision for modification, or the Agencies' regulations for correcting minor errors. These species included *Arceuthobium tsugense* (hemlock dwarf mistletoe), lynx, *Buxbaumia piperi*, and the "understory and forest gap herbivores" guild of arthropods.

Utilizing the direction on page C-6 of the 1994 ROD, an Environmental Assessment, a Finding of No Significant Impact (FONSI), and decision documents were prepared in 1999 to delay for 1 year the survey for 32 species which were determined to be infeasible to survey (USDA 1999 and USDI 1999). During 1999, field guides and other methods to improve our ability to survey for most of these species were prepared. However, due to the non-annual and unpredictable timing of fruiting of fungi, it remains infeasible to survey for them. Early in the year 2000, decisions were made to delay the survey date for seven fungi species for another year (USDA 2000 and USDI 2000). However, this decision requires fungi surveys during the appropriate seasons for 1 year prior to habitat-disturbing activities.

Recent Organizational Changes: The Intermediate Managers Group was chartered by the RIEC in 1999 to look at the efficiency of the present organization to implement the Survey and Manage Standards and Guidelines, including the proposed changes recommended in this SEIS. As a result, the Intermediate Managers Group has recommended a full time, interagency staff dedicated to implementing the Survey and Manage Standards and Guidelines. Key personnel include an Interagency Survey and Manage Program Manager and full time staff guiding landscape-level surveys, pre-project surveys, conservation planning, and information management. The new staff will work with the existing Interagency Survey and Manage workgroup to assure consistency and look for efficiencies in implementation.

Monitoring: As a result of the work done by the Survey and Manage regional level workgroup and the surveys by field staff, over 30,000 new sites of species in all categories have been found since 1995. The Agencies have been conducting implementation monitoring of projects, which includes monitoring of compliance with Survey and Manage and Protection Buffer Standards and Guidelines. Implementation monitoring for fiscal years 1996 through 1998 has found a high degree of compliance with these standards and guidelines. See *Results of the Implementation Monitoring Program* for fiscal years 1996, 1997, and 1998 (USDA, USDI 1996, 1997, and 1998). Preliminary results being compiled for fiscal year 1999 also show a high degree of compliance. These reports are available on the internet at: <http://www.fs.fed.us/r6/plan/monitor>.

Interagency Species Management System



Appendix D

Interagency Species Management System

Background

When the Survey and Manage mitigation was adopted in 1994 as part of the Northwest Forest Plan, 260 species were assigned to Category 1 (manage known sites). In an effort to compile all “known sites” of Survey and Manage species, searches were conducted in numerous herbaria, museums, and private collections, as well as state heritage program and agency databases and file information. In order to make it available for electronic retrieval and analysis, a database, called the “Known Sites Database,” was developed to store this information. The collected information was input in the database in 1995 and updated in 1997 for field use. Users recognized, however, that improvements were needed to make full use of the collected data and other information from field surveys and agency management direction. An interagency team of biologists and data managers identified the kinds of information needed for various management questions and initiated a process to provide this information electronically.

Needs for the Species Database

The database is designed to help its users manage and monitor species throughout their range. For example, in watershed analysis, the users need a database that helps them consider locations of Survey and Manage species on lands administered by the Bureau of Land Management or Forest Service. Other user needs include the ability to sort the data and to interface with a Geographical Information System (GIS) to map species and their sites. Field units of both Agencies need to have the ability to retrieve and access the database to make timely inputs. Regional level data access was also needed to plan landscape level surveys and to evaluate species distribution.

Development of the Interagency Species Management System

Staff of the Regional Ecosystem Office, Forest Service, BLM, and U.S. Fish and Wildlife Service planned and developed an improved data management system. The system, called the Interagency Species Management System (ISMS), replaces the Known Sites Database. Among the first steps taken by the staff developing ISMS was an extensive search of public and private sector databases to build from an existing system that meets some data storage and retrieval objectives. The team initially adopted a system used by the Six Rivers National Forest (California) that met most needs discussed above.

The Six Rivers system was modified to include data fields that would accommodate all information collected under the various Survey and Manage Survey Protocols. Hardware was procured and systems modified to allow the database to be physically located at one central location (Forest Service Regional Office in Portland). Revisions to ISMS were done after each of two sets of tests to improve performance and its utility to field users. The system was also modified to allow access by BLM and Forest Service field office personnel in the tri-state area of Oregon, Washington, and northern California. There are plans to modify ISMS to allow the U.S. Fish and Wildlife Service, National Park Service, and other federal agencies to input and query data. Opportunities for public access will also be investigated.

In the fall of 1998, agency field offices and associated USDA Pacific Northwest Research Station (PNW) staff submitted information in addition to that in the Known Sites Database. The 1998 data submissions, along with information from the Known Sites Database, were incorporated into

ISMS. Because ISMS was originally established to store information on known sites of Category 1 species, data on species in other Survey and Manage categories was not consistently included in ISMS. However, there was inclusion of available data about Categories 3 and 4 species collected under contract, data from a red tree vole research effort, and some data on great gray owls. In late November 1998, ISMS included 18,000 records.

Two problems were identified during the preliminary analysis. Some of the data was submitted from multiple sources, resulting in some duplication of records. Also, the existing database design was complex and did not allow an easy method of displaying sites. These problems were resolved during the species analysis process by cross-referencing the data with other data sources, such as the Pacific Northwest regional extensive survey data files (which had incorporated the earlier Known Sites Database), and by considering ecological factors beyond the number and distribution of sites provided by ISMS.

In the fall of 1999, another regional update was completed and included data through November 10, 1999. Data collected by BLM and Forest Service (including PNW) field units was added for use in a species analysis in February and March 2000. The problems encountered in 1999 were significantly reduced by a special effort to avoid input of duplicate records and utilizing ISMS program improvements done in 1999. In November 1999, ISMS included 42,000 records.

Further work on the program and data management is ongoing to improve the performance and reliability of ISMS.

Design and Goal of ISMS

The ISMS is designed to allow field staff to input various field observation data, including species locations, the spatial accuracy of such locations, and information about species habitat and populations. ISMS also allows tracking of information about the implementation of the surveys, such as weather conditions at the time of data collection and areas surveyed (whether or not the species of interest was found).

The goal of ISMS is to enable field staff of the BLM and the Forest Service to readily share information on locations and habitats of species. This data sharing will allow analysis on the range of the species by both field and regional level staff. The GIS component of ISMS will allow users to establish points or areas from mapped information or from global positioning system readings. The GIS will allow users to query for species occurrences in various land allocations and habitat types, or specific to other data such as elevation. The GIS will also help users focus on areas where the species is of greatest concern by analyzing geographic ranges of a species and other types of information.

Status of Implementing ISMS

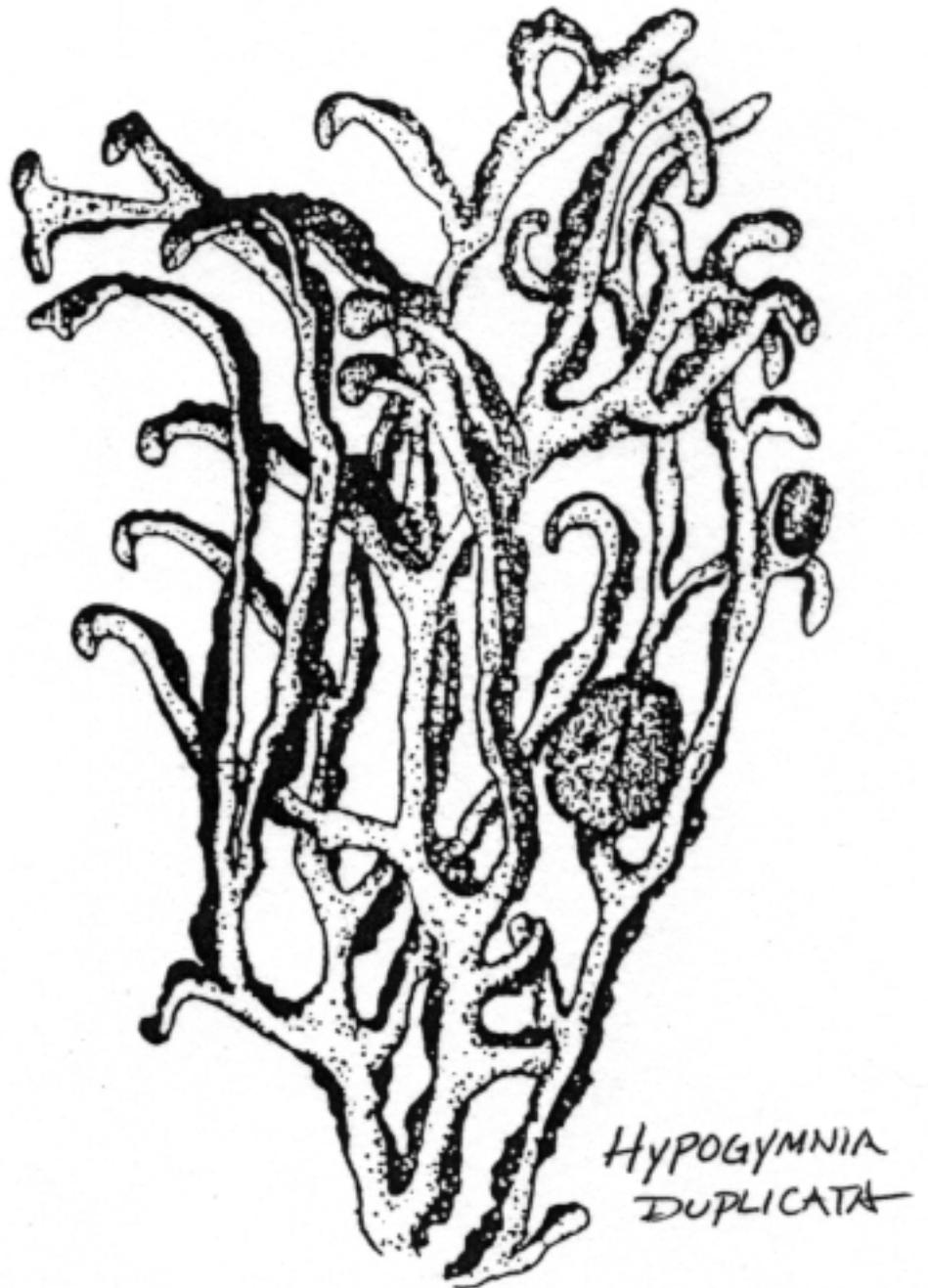
To meet the timeframe of the species analyses for the Draft Supplemental Environmental Impact Statement for Survey and Manage, ISMS has been populated centrally using regional data calls. In the year 2000, data input and management will be shifted to the BLM and Forest Service field offices. All data on Survey and Manage species in the database will be accessible to Forest Service and BLM offices at field and regional levels. The ISMS database will be used and updated by field office staff on a frequent basis. In 2000 and 2001, it is expected that there will be a considerable increase in the amount of information in ISMS as field units add data to fields not captured for regional purposes and add new sites found during field surveys or obtained from other reliable sources.

Data includes the point location of the species, or the center of a polygon (irregular shape) showing the area occupied by the species (the site) and other data fields associated with habitat and population information as it becomes available. The current version of ISMS relies on GIS

software that stores the spatial files at each field office. Periodic compilations of these files will be made at the regional level and will be available to the ISMS users in the field offices for regional analyses and views of the known range of a species in the area of the Northwest Forest Plan. Improvements in data quality and content are expected as the field units become familiar with ISMS. As user requirements dictate and technology and budgets allow, we expect improvements in the capability of ISMS.

Appendix E

Criteria for Identifying Species Closely Associated With Late-Successional and Old-Growth Forests



Appendix E

Criteria for Identifying Species Closely Associated With Late-Successional and Old-Growth Forests

The Forest Ecosystem Management Assessment Team (FEMAT) identified more than 1,000 species as being closely associated with late-successional forests on federal lands. The criteria listed below are adapted from the FEMAT report, with minor edits to make it applicable to this SEIS. A species is considered to be closely associated with late-successional and old-growth forests if it met at least one of the following criteria:

Criterion 1: The species is significantly more abundant in late-successional and old-growth forest than in young forest, in any part of its range. (For species originally on Survey and Manage in 1994, this was based on field study or collective professional judgment of the FEMAT. For decisions made in the future, this is based on field study, occurrence records, or other information that satisfies the collective professional judgement of the panel doing final placement of species in the Species Review Process. In the absence of new information, the panel will defer to the FEMAT judgement regarding association with late-successional forests.)

Criterion 2: The species shows association with late-successional and old-growth forest (may reach highest abundance there) and the species requires habitat components that are contributed by late-successional and old-growth forest. (For species originally on Survey and Manage in 1994, this was based on field study or collective professional judgment of the FEMAT. For decisions made in the future, this is based on field study, occurrence records, or other information that satisfies the collective professional judgement of the panel doing final placement of species in the Species Review Process. In the absence of new information, the panel will defer to the FEMAT judgement regarding association with late-successional forests.)

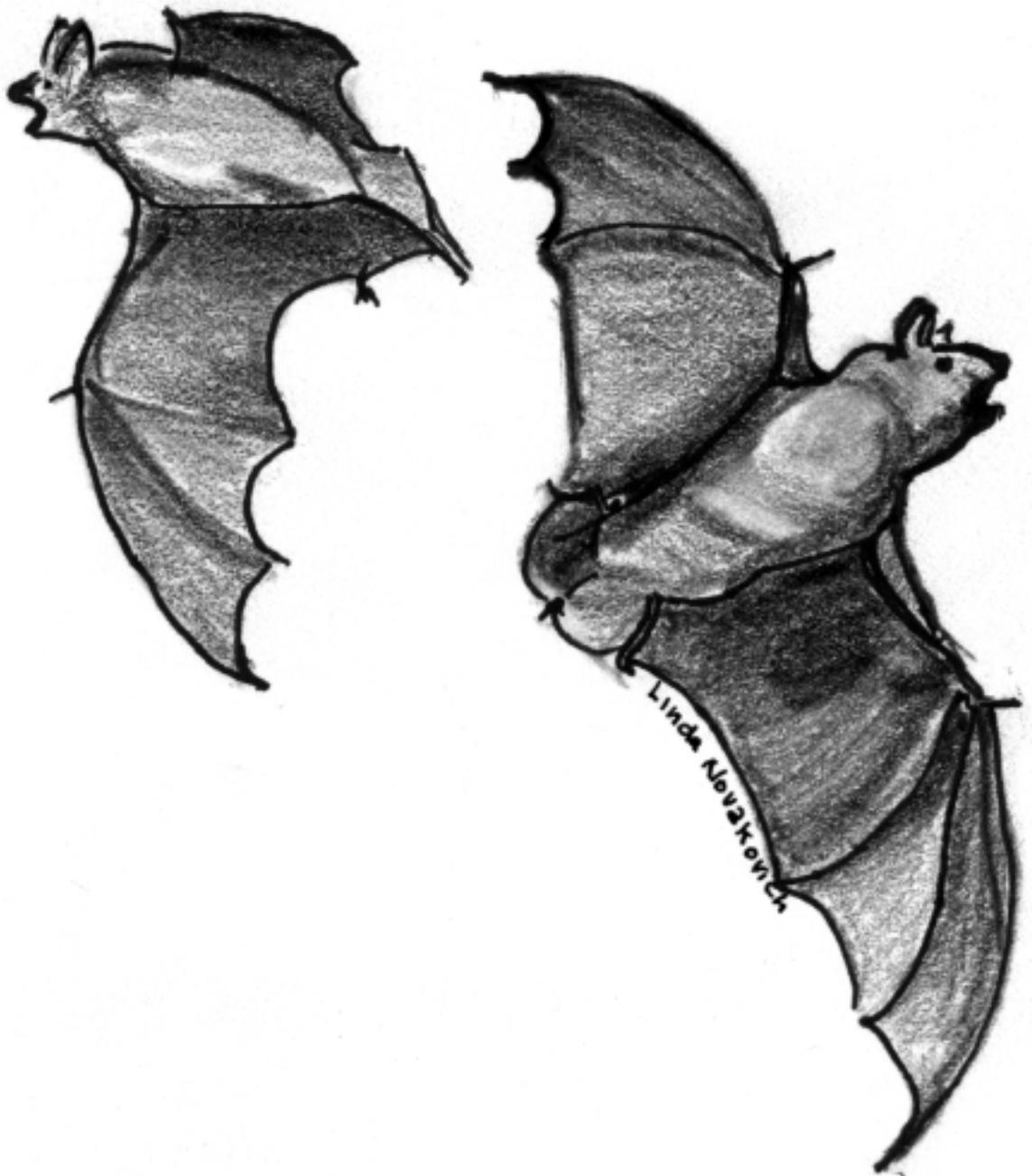
Criterion 3: The species is associated with late-successional and old-growth forest (based on field study) and is on a federal (U.S. Fish and Wildlife Service) or state threatened or endangered list; the U.S. Fish and Wildlife Service candidate species list; a Forest Service or Bureau of Land Management special status species list in Oregon, Washington, or California; or is listed by the States of Washington, Oregon, or California as a species of special concern or as a sensitive species.

Criterion 4: Field data are inadequate to measure strength of association with late-successional and old-growth forest; the species is listed as a federal (U.S. Fish and Wildlife Service) threatened and endangered species; and the FEMAT suspected, or the panel doing the final placement in Species Review Process suspects, that it is associated with late-successional and old-growth forest.

Source: Adapted from Table 3&4-18, Northwest Forest Plan Final Supplemental Environmental Impact Statement (USDA, USDI 1994a); which had been adapted from Thomas et al. (1993).

Appendix F

The Species Review Process



Appendix F

The Species Review Process

The goal of the Species Review Process was to evaluate the latest information about taxa in the Survey and Manage and Protect from Grazing Standards and Guidelines and some of the taxa in the Protection Buffer Standards and Guidelines of the Northwest Forest Plan and to use this information to propose changes to management for these taxa, as appropriate. This review process was done pursuant to the Survey and Manage Standards and Guidelines stating "...changes could include changing the schedule, moving species from one survey strategy to another, or dropping this mitigation requirement for any species whose status is determined to be more secure than originally projected." (USDA, USDI 1994b, p. C-6.) No provision for adding taxa to the Survey and Manage Standards and Guidelines was suggested or specified in the current direction. Therefore, no information for adding new taxa was sought or considered during this iteration of the process.

The Species Review Process built on the information and process conducted by the Forest Ecosystem Management Assessment Team (FEMAT) (USDA et al. 1993), the information presented in the Final Supplemental Environmental Impact Statement (Final SEIS) (USDA, USDI 1994a) for adoption of the Northwest Forest Plan, and the earlier Scientific Analysis Team (SAT) report (Thomas et al. 1993). This analysis process did not repeat the FEMAT and SEIS analysis processes. Rather, the process examined whether new information or understanding about the species was sufficient to warrant proposing changes in the status of taxa under the Survey and Manage Standards and Guidelines. The process also was extended to include most Protection Buffer and Protect from Grazing species, which are being considered in the SEIS for inclusion in the Survey and Manage Standards and Guidelines.

The Species Review Process was conducted twice during SEIS development, prior to release of the Draft SEIS and between the Draft SEIS and Final SEIS to include new information gathered by the Agencies, including through public comment. The basic steps of the process remained the same, although there were slight differences due to changes in the information available during the second process.

Species Review Process - 1999

The Species Review Process was initially conducted between December 1998 and February 1999 and consisted of three sequential analysis steps:

- *Step 1*: A filter to determine whether there was substantial new information or other reasons for additional review.
- *Step 2*: A review of current information on the taxa and the Northwest Forest Plan with reference to future persistence and habitat availability.
- *Step 3*: Use of the review and other available information to propose changes to the treatment of the taxon within a proposed alternative in this SEIS.

Each of the three steps is described below.

Step 1 - Systematic Filter to Determine Level of New Information

The purpose of this step was to separate the taxa for which there was substantial new information, questions as to their presence in the Northwest Forest Plan area, or specific concerns that warranted revisiting the FEMAT and SAT analysis results. Most Protection Buffer species were

also identified for additional consideration. Panels of one to three taxa specialists were convened for each taxa group to examine and consider the information available on each taxon (see list of panel participants at end of this appendix).

Panel members were provided with all available information relative to the taxa and taxa group from historic and new sources, including the SAT report (Thomas et al. 1993), FEMAT (USDA et al. 1993), the Northwest Forest Plan Final SEIS (USDA, USDI 1994a, including Appendix J2), the Northwest Forest Plan Record of Decision (USDA, USDI 1994b), and any other interagency documents such as Management Recommendations. From the Interagency Species Management System (ISMS) database, panels were provided with taxon-specific “dot maps” that showed all point locations, with indications of those found before and after January 1993. The panels also received a tally of the number of records by taxon in three categories (records located since 1993, records located from 1980 to 1993, and records located before 1980).

Because one purpose of this step was to determine whether there was substantial new information on individual taxa since the FEMAT panels completed their review in early 1993, panel members were instructed to assume that all sites located during or after 1993 represented new information. The pre-FEMAT information was further divided into sites located before and after 1980. Sites located before 1980 were considered less likely to be extant due to timber harvest and other habitat-disturbing activities on federal and other lands.

The panels members used this information, along with their knowledge of each taxon and the taxa group, to address the following four basic questions:

1. Was the taxon known or suspected to occur within the range of the northern spotted owl?
2. Was the taxon listed as a Protection Buffer species?
3. Were there any issues or errors that might affect the status of the taxon? Examples include, but are not limited to: (a) new taxonomic information that indicates a “species” listed on Table C-3 of the Northwest Forest Plan Record of Decision (USDA, USDI 1994b) was no longer considered a species; (b) species with a FEMAT rating of 100 percent probability to Outcome A; (c) taxon with documentation in Appendix J2 of the Northwest Forest Plan Final SEIS (USDA, USDI 1994a) that persistence may not be at risk; and, (d) suspected errors in inclusion or placement in components of Table C-3.
4. Was there new information on the taxon since signing of the Northwest Forest Plan Record of Decision that warrants a review of its status as a Survey and Manage or Protection Buffer species? New information included, but was not limited to, such information as: (a) significant change in number of known sites; (b) sufficient new populations to potentially alter the status of rarity and reduce concern for persistence; (c) new habitat information that indicates the taxon was more or less specialized than previously thought; (d) indications that a taxon may be rarer than anticipated; (e) new understanding of the effects of the Northwest Forest Plan as it has been implemented indicating that habitat protection for the taxon may differ from that anticipated during FEMAT and the Northwest Forest Plan Final SEIS; (f) increase in the known and suspected range of the taxon; and, (g) potential technical survey concerns.

Taxa not known or suspected to occur within the range of the Northwest Forest Plan (question 1), which had issues or errors that might affect their status (question 3), or with substantial new information since signing of the Northwest Forest Plan Record of Decision (question 4) were reviewed further in Step 2. All Protection Buffer species (question 2) were also reviewed further in Step 2. All information was recorded on Step 1 data sheets and stored in the individual taxon files (USDA, USDI Species Review Process 1999a). Based on this information, 187 taxa were evaluated in Step 2.

Step 2 - Review of Current Information by Taxon

The purpose of this step was to review and document all new information on the individual taxa that passed through the Step 1 process and to evaluate the effect of this information on our understanding of the taxon's distribution, habitat association, and level of concern for persistence for use in Step 3. This step was based on current information and knowledge of implementing the Northwest Forest Plan, including interagency implementation memoranda and the results of implementation monitoring.

Panels of 5 to 10 taxa specialists and other biologists were convened for each taxa group and asked to document the current state of our knowledge of each taxon's biology and habitat associations (see list of panel participants at end of this appendix). They reviewed the FEMAT, the Northwest Forest Plan Final SEIS (Appendix J2 in USDA, USDI 1994a), and the SAT conclusions (Thomas et al. 1993). They also evaluated whether and how the new information might affect the basis for the FEMAT, the Northwest Forest Plan Final SEIS, and the SAT conclusions (that is, how our understanding of the risk factors identified in the above documents has changed). The panels were presented specific questions related to the criteria that would be used for determining placement in categories during Step 3. Questions included items such as: Is it reasonable for trained field personnel to identify the taxon in the field? Were there sufficient differences in rarity or habitat conditions to potentially warrant different levels of concern for persistence or management in major portions of the range?

Panels were provided with the data sheets, information, and point maps used in the Step 1 process. Each panel was provided with the following information from the Interagency Species Management System Database:

- A point map with records by date categories.
- Number of records by date category and precision of location.
- Number of records by land allocation and ownership.
- Information from individual records if needed, including date and observer.

For a few taxa groups there was also limited information available on elevation, plant association, feature, and slope of sites or records.

For purposes of consistency, each panel was given a set of assumptions for various components of the Northwest Forest Plan that might affect late-successional and old-growth related taxa. These assumptions were drawn from the Northwest Forest Plan Record of Decision (USDA, USDI 1994a) and any interagency implementation memoranda for standards and guidelines that might affect the habitat of the Survey and Manage taxa. At the start of each panel session, the Species Review Coordinator met with all panel participants to review the process and Northwest Forest Plan assumptions, as well as answer any questions. Significant clarifications were added to the documentation of the process.

For each taxon, the individual taxa panels completed a worksheet containing specific questions to ensure that all potential issues were considered when evaluating the current condition of the taxa. Responses to the questions were based on a discussion of the panel, with written documentation of the information and rationale behind the response. The questions covered the following areas to provide the latest information on the individual taxa and allow evaluation of the effect of this information on our understanding of the taxon's distribution, habitat association, and level of concern for persistence:

1. Additional screening questions on range relative to the Northwest Forest Plan area, late-successional/old-growth association, and taxonomic changes such as the combining of previously separate taxa into a single, now common, taxon.
2. Biological information, including:
 - Rarity in terms of number of records, distribution of known sites, and range of the taxon.

- Habitat association, amplitude, rarity, and seral stage association.
- Effects of the Northwest Forest Plan on the taxon or habitat, including proportion of known sites and suspected habitat on federal lands, and proportion of known sites and suspected habitat in reserve land allocations.
- Effects of Matrix Standards and Guidelines and other management requirements of the Northwest Forest Plan area.
- Cumulative effects.
- Other questions on survey feasibility and differences in condition across range.

Panels were asked to review the concerns and documentation contained in the FEMAT report (and SAT for Protection Buffer species) and Appendix J2 of the Northwest Forest Plan Final SEIS (USDA, USDI 1994a). The panels compared the current information to that presented in the previous documents and provided summary documentation on how the new information might change the perception of concern for persistence for each taxon (that is, how understanding of the risk factors identified in the above documents has changed).

All information from the Step 2 panels was documented on data forms, including summaries of the discussion of the panel relative to each question. All Step 2 data sheets were stored in the taxon files (USDA, USDI Species Review Panel 1999b).

Step 3 - Determination of Appropriate Management for Each Taxon

The purpose of this step was to compare the information provided by the specialists in Steps 1 and 2, Northwest Forest Plan, and FEMAT processes to a set of criteria (see below) for the different proposed Survey and Manage categories. This comparison was used to propose changes to the category for each taxon under a proposed alternative for the Survey and Manage Standards and Guidelines which became Alternative 1 in this SEIS. This could include removing taxa from the list or moving Protection Buffer and Protect from Grazing species to the Survey and Manage Standards and Guidelines, and proposing the categories in which these taxa should be placed.

A panel of seven to eight regional biological staff and managers was convened to review the information (see list of panel participants at end of this appendix). The panel was provided with all the information from Step 1, including that from the FEMAT report, Northwest Forest Plan Final SEIS, and SAT Report. For the 187 taxa reviewed during Step 2 (those with substantial new information or other reasons for additional review), the panel was provided the worksheet and any additional information. Panel members were also provided a description of the six categories that were subsequently used to create Alternative 1 in this SEIS and criteria for placement of taxa into each category. Individual taxa specialists from the Step 2 panels were available at each session to assist with interpretation of the information, but they were not members of the Step 3 panel.

In April 1999, the panel reviewed the approximately 400 taxa included in the Survey and Manage, Protection Buffer, and Protect from Grazing Standards and Guidelines. Based on this effort, the panel either recommended removal of a taxon from the Survey and Manage Standards and Guidelines, or placement of the taxon into one of the six categories. These categories and their defining criteria were later incorporated into Alternative 1 in the SEIS. The panel reviewed the information on each taxon, compared this to the criteria for each category, and, by majority vote, proposed placing the taxon into the appropriate categories.

Criteria for Species Analysis

The following criteria and factors were used for evaluating the appropriate status and placement of the taxa within the appropriate Survey and Manage category. These criteria were refined during the initial steps of the process and all species were compared to the final draft of the criteria before completion of the process. The criteria were separated into basic criteria or category-related

criteria. The Survey and Manage basic criteria must be met to qualify for consideration under the Survey and Manage Standards and Guidelines.

Survey and Manage Basic Criteria

To be considered or covered by the Survey and Manage Standards and Guidelines, taxa must meet *all* of the following criteria. Taxa that did not meet all of these criteria were proposed for removal from the Survey and Manage list.

1. The taxon must occur within the Northwest Forest Plan area, or occur close to the Northwest Forest Plan area and have potentially suitable habitat within the Northwest Forest Plan area. *Taxa known from historic records within the boundary of the Northwest Forest Plan area were considered to occur within the boundaries, regardless of whether the historic sites were known to be extant or not.*
2. Taxa must meet the criteria for being closely associated with late-successional or old-growth forest, using the criteria of the Northwest Forest Plan Final SEIS (USDA, USDI 1994a), as described in Appendix E of this SEIS.
3. The reserve system and other standards and guidelines of the Northwest Forest Plan, other than the Survey and Manage Standards and Guidelines, do not appear to provide for reasonable assurance of the taxon's persistence. *This generally meant that habitat or habitat categories needed for the persistence of the taxon were not considered to be adequately provided for by the Northwest Forest Plan land allocations, standards and guidelines (other than Survey and Manage Standards and Guidelines), or the underlying National Forest Land and Resource Management Plans or BLM Resource Management Plans. Persistence, in this context, meant at a level of assurance intended in the 1994 Northwest Forest Plan.*

Category Criteria

For each taxon meeting the Survey and Manage basic criteria, the following criteria and information were used to place the taxon in the appropriate categories of Alternative 1 and, subsequently, Alternatives 2 and 3. (See Tables F-1 and F-2 for placement of species in Alternative 1 using the species review process described in this Appendix.) Past inventory efforts have varied widely between taxa groups and geographic locations, so the significance of population numbers and other information was viewed in that context. A low number of sites for taxa that has been well inventoried, for example, may be more indicative of rarity than the same number of sites for taxa for which there have been limited searches. Of the taxa groups covered under the Survey and Manage Standards and Guidelines, vertebrates and vascular plants have had the greatest level of interest and inventory prior to the Northwest Forest Plan, especially those taxa on the Agencies' special status species lists. However, mollusks and bryophytes received the least attention on federally managed lands prior to the Northwest Forest Plan, and therefore, higher numbers of sites of vertebrates and vascular plants may reflect, in part, greater survey effort.

In most cases, the criteria and factors for each category were not mutually exclusive, but rather served as indicators of the appropriate category for the taxon. If a taxon met criteria for more than one category equally well or to be intermediate between two categories, the more conservative (or protective) category was applied. Factors for determining whether a taxon was rare, or whether all sites were likely to be needed to provide a reasonable assurance of persistence, did not include numerical or absolute cutoffs, but rather were treated as comparative values. At the extremes, this does not pose any difficulty (e.g., two likely-extant federal sites were definitely rare). Intermediate values required consideration of the history of inventory for the taxon and other factors, and values for the number of likely-extant sites that indicate low numbers for some taxa may equally represent moderate to high numbers for other taxa.

Category A (Rare, Pre-Disturbance Surveys Practical)

Objective: Manage all known sites and minimize inadvertent loss of undiscovered sites.

Criteria for including a species in Category A involved factors related to reaching the following four primary conclusions:

1. There was a high concern for persistence.
2. The species occurred rarely and was poorly distributed within its range in the Northwest Forest Plan area.
3. All known sites or population areas were likely to be necessary to provide reasonable assurance of the taxon's persistence.
4. Pre-disturbance surveys were practical.

Information used to determine if there was a high concern for persistence and all sites were likely necessary to provide reasonable assurance of the taxon's persistence included factors such as:

- The low number of likely-extant sites/records on federal lands indicates rarity. *This requires adjusting the number of database records. Records may be lower than expected because of chronic under-reporting of common taxon or greater than the actual number of sites due to multiple database records of individual sites. Sites recorded over two decades ago may no longer be extant, especially in highly developed or quickly developing areas such as the Puget Sound.*
- Taxon is poorly distributed within the taxon's range or habitat. *Uneven pattern of distribution relative to potential habitat indicates that other factors may be limiting the distribution and occurrence of the taxon.*
- There is a limited number of individuals per site, indicating that individual sites were considered to be less secure.
- The taxon has highly specialized habitat requirements (narrow ecological amplitude), limiting the habitat available to the taxon and reducing the likelihood that many new sites will be located.
- Microsite habitat is limited, reducing the likelihood that many new sites will be located.
- Dispersal capability is limited relative to federal habitat, resulting in potential for individual sites/populations to be isolated.
- Reproduction and/or life history characteristics provide additional risk factors to maintaining existing and future populations. *This may include late age of maturity, low reproductive rates, or low survival rates that indicate a taxon may have trouble persisting at present sites or surviving bottlenecks.*
- Low number of sites in reserves and/or low likelihood of sites or habitat in reserves.
- Habitat fragmentation that may lead to genetic isolation.
- Factors beyond management of the Northwest Forest Plan affect persistence, but special management under the Northwest Forest Plan will help persistence.
- Declining habitat trend.

Surveys prior to initiation of habitat disturbance were considered "practical" if all of the following factors applied:

- The taxon appears annually or predictably and produces identifying structures or the critical identification characteristics are visible for an extended time.
- The taxon is not so minuscule or cryptic as to be barely visible.
- The taxon can authoritatively be identified by more than a few experts, or the number of available experts is not so limited that it would be impossible to accomplish all surveys or identifications for all proposed habitat-disturbing activities in the Northwest Forest Plan area needing identification within the normal planning period for the activity.

- The taxon can be readily distinguished in the field and needs no more than simple laboratory or office examination to confirm its identification.
- Surveys do not require unacceptable safety risks.
- Surveys can be completed in two field seasons (approximately 7-18 months).
Therefore, surveys can be completed during a normal project development and planning process.
- Credible survey methods for the taxon are known or can be developed within a reasonable time period (approximately 1 year).

Category B (Rare, Pre-Disturbance Surveys Not Practical)

Objective: Manage all known sites and minimize inadvertent loss of undiscovered sites.

Criteria for including a taxon in Category B involved factors related to reaching the following four primary conclusions:

1. There was a high concern for persistence.
2. The taxon occurred rarely and was poorly distributed within its range in the Northwest Forest Plan area.
3. All known sites or population areas were likely to be necessary to provide reasonable assurance of the taxon's persistence.
4. Pre-disturbance surveys were not practical.

Surveys prior to initiation of habitat disturbance were not considered "practical" if any of the following factors applied:

- The taxon does not, annually or predictably, produce identifying structures or the critical identification characteristics are visible during only a very short or unpredictable time period. *Therefore, targeting surveys to correspond with the appropriate timing when the taxon can be identified is highly impractical.*
- The taxon is so minuscule or cryptic as to be barely visible.
- The taxon can only be authoritatively identified by a few experts or the number of available experts is so limited that it is impossible to accomplish all surveys or identifications for all proposed habitat-disturbing activities in the Northwest Forest Plan area needing identification within the normal planning period for the activity.
- The taxon cannot be readily distinguished in the field or needs more than simple laboratory or office examination to confirm its identification.
- Surveys require unacceptable safety risks.
- Surveys cannot be completed in two field seasons (approximately 7-18 months).
Therefore, surveys cannot be completed during a normal project development and planning process.
- Credible survey methods for the taxon are not known or cannot be developed within a reasonable time period (approximately 1 year).

Category C (Uncommon, Pre-Disturbance Surveys Practical)

Objective: Identify and manage high-priority sites to provide for reasonable assurance of the taxon's persistence. Until high-priority sites can be determined, manage all known sites.

Criteria for including a taxon in Category C involved factors related to reaching the following four primary conclusions:

1. There was not a high concern for persistence.
2. It was likely that not all known sites or population throughout the taxon's range in the Northwest Forest Plan area were necessary for reasonable assurance of persistence of the taxon.

3. The taxon was uncommon (as opposed to rare).
4. Pre-disturbance surveys were practical.

Information used to determine if there was a moderate concern for persistence and not all sites were likely necessary to provide reasonable assurance of the taxon's persistence included factors such as:

- A higher number of likely-extant sites/records does not indicate rarity of the taxon. *This requires adjusting the number of database records. Records may be lower than expected because of chronic under-reporting of common taxon or greater than the actual number of sites due to multiple database records of individual sites. Sites recorded over two decades ago may no longer be extant, especially in highly developed or quickly developing areas such as the Puget Sound.*
- The number of individuals per site does not indicate that many known sites are not secure. *There may be a low to high number of individuals per site, but populations are not consistently low.*
- There is a less restricted distribution pattern relative to range or potential habitat.
- There is a moderate-to-broad ecological amplitude, such that the habitat available to the taxon is more widespread and the likelihood of finding new sites is not reduced.
- There is a moderate-to-high likelihood of sites in reserves.
- Dispersal capability is not substantially limited relative to federal habitat, reducing the potential for individual sites/populations to be isolated.
- Reproduction and/or life history characteristics do not provide additional risk factors to maintaining existing and future populations. *The taxon does not exhibit characteristics, such as late age of maturity, low reproductive rates, or low survival rates that indicate a taxon may have trouble persisting at present sites or surviving bottlenecks.*

Surveys prior to initiation of habitat disturbance were considered "practical" if all of the factors described in Category A applied.

Category D (Uncommon, Pre-Disturbance Surveys Not Practical or Not Necessary)

Objective: Identify and manage high-priority sites to provide for a reasonable assurance of the taxon's persistence. Until high-priority sites can be determined, manage all known sites.

Criteria for including a taxon in Category D involved factors related to reaching the following four primary conclusions.

1. There was not a high concern for persistence.
2. It was likely that not all known sites or population throughout the taxon's range in the Northwest Forest Plan area were necessary for reasonable assurance of persistence of the taxon.
3. The taxon was uncommon (as opposed to rare).
4. Surveys were not practical or not necessary. *That is, surveys of suitable habitat across the landscape were likely to be more effective at finding sites needed for long-term persistence than focusing in areas proposed for projects.*

Information used to determine if there was a moderate concern for persistence and not all sites were likely necessary to provide reasonable assurance of the taxon's persistence include the same factors as Category C.

Surveys prior to initiation of habitat disturbance were not considered "practical" if any of the factors described in Category B applied.

Category E (Rare, Status Undetermined)

Objective: Manage all known sites while determining if the taxon meets the basic criteria for Survey and Manage and, if so, to which category it should be assigned.

Criteria for including a taxon in Category E involved factors related to reaching the following two primary conclusions.

1. The number of known sites indicated the taxon was rare.
2. Information was insufficient to determine whether Survey and Manage basic criteria were met, or to determine what management was needed for a reasonable assurance of the taxon's persistence.

Information used to determine that the taxon was rare primarily included the number of likely-extant sites/records and survey information on federally managed lands. *This requires adjusting the number of database records. Records may be lower than expected because of chronic under-reporting of common taxon or greater than the actual number of sites due to multiple database records of individual sites. Sites recorded over two decades ago may no longer be extant, especially in highly developed or quickly developing areas such as the Puget Sound.*

Factors used to reach a conclusion that information was insufficient to determine whether Survey and Manage basic criteria were met or to determine what management was needed for a reasonable assurance of the taxon's persistence included:

- Significant questions remain as to whether the taxon meets the basic criteria for Survey and Manage (i.e., the taxon may not likely occur within the Northwest Forest Plan area, or may not be closely associated with late-successional or old-growth forest using the criteria in Northwest Forest Plan Final SEIS (USDA, USDI 1994a) as described in Appendix E of this SEIS.
- Information is insufficient to determine assignment of the taxon in a category.

Category F (Uncommon or Concern for Persistence Unknown, Status Undetermined)

Objective: Determine if the taxon meets the basic criteria for Survey and Manage, and if so, to which category it should be assigned.

Criteria for including a taxon in Category F involved factors related to reaching the following two primary conclusions.

1. The total number of sites indicated that the taxon was uncommon, rather than rare.
2. Information was insufficient to determine whether Survey and Manage basic criteria were met, or to determine what management was needed for a reasonable assurance of the taxon's persistence.

Information used to determine if the species was uncommon (but not rare) included primarily a moderate-to-higher number of likely-extant sites/records. *This requires adjusting the number of database records. Records may be lower than expected because of chronic under-reporting of common taxon or greater than the actual number of sites due to multiple database records of individual sites. Sites recorded over two decades ago may no longer be extant, especially in highly developed or quickly developing areas such as the Puget Sound.*

Factors used to reach a conclusion that information was insufficient to determine whether Survey and Manage basic criteria were met or to determine what management was needed for a reasonable assurance of the taxon's persistence included:

- Significant questions remain as to whether the taxon meets the basic criteria for inclusion in Survey and Manage (i.e., the taxon may not likely occur within the Northwest Forest Plan area, or may not be closely associated with late-successional or old-growth forest using the criteria from the Northwest Forest Plan Final SEIS (USDA, USDI 1994a) as described in Appendix E of this SEIS.
- Information is insufficient to determine assignment of the taxon in a category.

Species Review Process - 2000

Based on new information collected by the Agencies since January 1999, including information from public comments to the Draft SEIS, the Species Review Process was again conducted in February and March 2000. The overall goal of this process was to review the placement of species in the Survey and Manage Draft SEIS. Only species that met one of the following criteria were reviewed; the remainder were considered to be correctly placed in the 1999 Species Review Process.

1. There was significant new information that might change the concerns for, or placement of, a species.
2. The 1999 Step 3 panel was significantly divided on the placement of the species.
3. The species was identified as a potential outlier in a consistency review of the placement of the species in the Draft SEIS.

The process utilized in the Draft SEIS, with minor differences due to changes in the information available to the panels, was also utilized in 2000. The process consisted of three sequential analysis steps:

- *Step 1:* A filter to determine whether there was substantial new information or other reasons for additional review.
- *Step 2:* A review of current information on the taxa and the Northwest Forest Plan with reference to future persistence and habitat availability.
- *Step 3:* Use of the review and other available information to propose changes to the treatment of the taxon within a proposed alternative in this SEIS.

Step 1 - Systematic Filter to Determine Level of New Information

The purpose of this step was to separate the taxa for which there was substantial new information since the previous Species Review Process (described above) that would warrant revisiting the results of that process. Panels of one to several taxa specialists were asked to examine the latest information available on the species (see list of panel participants at end of this appendix).

Panel members were provided with a list of species with new locations in the ISMS database. New locations were defined as data entered since October 10, 1998 (the last date of data entry for the previous Species Review Process). Two taxon-specific “dot maps” were provided that showed all point locations known at the time of the previous process (entered into the ISMS database before October 10, 1998) and all locations entered since the previous process, with indications of those found before and after January 1993. The panels received two tally sheets of the number of records by taxon in three categories (records located since 1993, records located from 1980 to 1993, and records located before 1980). These were also split by locations known at the time of the previous process (entered into the ISMS database before October 10, 1998) and locations entered since the previous process. For this iteration of the process, many of the duplicate records were removed from the database, so the number of records used in this Species Review Process more closely represents actual unique locations on the ground. Panels were also provided with a complete set of the information available during the 1999 Species Review Process, including any panel notes.

The panels were asked to review all species with new ISMS records entered since October 10, 1998, as well as any species for which they were aware of new information that might affect the rarity, survey practicality, presence in the Northwest Forest Plan area, or late-successional/old-growth forest association. Panel members used this information, along with their knowledge of each taxon and the taxa group, to address the following questions:

1. Had there been any change in knowledge since the last Species Review Process (1999), as to whether this species occurs or is likely to occur in the Northwest Forest Plan area?
2. Had there been any change in knowledge since the last Species Review Process (1999), as to whether this species is closely associated with late-successional or old-growth forests (using Draft SEIS definition)?
3. Had there been any change in knowledge since the last Species Review Process (1999), as to the practicality of pre-disturbance surveys?
4. Was there new information, or changes in knowledge or understanding, since the last Species Review Process (1999), that warrants additional review of this species' base information in Step 2? This included, but was not limited to: (a) substantial increase or decrease in the number of likely-extant Federal records/sites; (b) substantial change in understanding of habitat association of species; (c) substantial increase or decrease in the suspected range of the species; (d) substantial change in understanding of distribution of the species within its range; (e) substantial change in understanding of the rarity of the species; (f) substantial new understanding of how the Northwest Forest Plan affects the species; and, (g) substantial new taxonomic information indicating that the "species" on Table 2-2 of the Draft SEIS is no longer considered a separate taxonomic entity, or that previously separate taxonomic entities have been combined, such that the range, distribution, or populations have substantially changed.

Any positive responses were compared to the reasons for placement of the species on Table F-1 of the Draft SEIS. If the new information potentially affected the reasons for its placement, or would indicate another placement was more appropriate, the species was forwarded to Step 2.

Step 2 - Review of Current Information by Taxon

The purpose of this step was to review and document substantial new information on the individual taxa and evaluate the effect of this information on our understanding of the taxon's distribution, habitat association, and level of concern for persistence under the Northwest Forest Plan for use in Step 3.

As in the 1999 Species Review Process, panels of taxa specialists and other biologists were convened for each taxa group and asked to document the current state of our knowledge of each taxon's biology and habitat associations (see list of panel participants at end of this appendix). They reviewed all of the information available on the species, including responses on any Step 2 worksheets from the 1999 Species Review Process, in light of the most recent information on the species. Only species with substantial new information (as determined from the Step 1 process) were reviewed. The panels were asked to review and update the information, conclusions, and discussion for all portions of the 1999 Step 2 panel notes affected by new information. For those species that do not have Step 2 panel notes (those previously determined to have no significant new information since FEMAT), the Step 2 panel completed notes as described in the 1999 Species Review Process.

Step 3 - Determination of Appropriate Management for Each Taxon

The purpose of this step was to compare the information provided by the specialists in Steps 1 and 2, the 1999 Species Review Process, Northwest Forest Plan, and FEMAT processes to a set of

criteria for the different proposed Survey and Manage categories. The comparison was used to propose changes to the category for each taxon under a proposed alternative for the Survey and Manage Standards and Guidelines. The criteria for this process were those listed for each category in Chapter 2 of this SEIS, and are generally the same as the ones used in the previous Species Review Process as described above.

A panel of six regional biological staff and managers was convened to review the information (see list of panel participants at end of this appendix). The panel was provided with all the information from the 1999 Species Review Process. For the taxa reviewed by the 2000 Step 2 panels (those with substantial new information or other reasons for additional review), the panel was provided the revised or new Step 2 panel notes. Individual taxa specialists from the Step 2 panels were available at each session to assist with interpretation of the information, but they were not members of the Step 3 panel.

In March 2000, the Step 3 panel reviewed all taxa that met one of the three criteria described at the beginning of the Species Review Process - 2000 section. These include significant new information that might change the concerns for or placement of a species, significant division on placement of the species in the 1999 Species Review Process, or questions concerning consistency of the placement of the species in the Draft SEIS. The panel reviewed the information on each taxon, compared this to the criteria for each category, and, by majority vote, proposed placing the taxon into the appropriate categories.

The primary reasons for placing each taxon in the category were recorded in a summary table format (Tables F-1 and F-2 in this Appendix).

Definition of a species "site": The criteria for placement of species include evaluation of the general number of likely-extant sites on federal lands. To provide a consistent evaluation of sites within and across taxa groups, a definition of "site" was developed for this process, and a method to evaluate whether a site was "likely extant" was developed. Sites were generally defined as non-duplicative records from the ISMS database with the following corrections.

For a variety of reasons relative to site management and the species biology, the definition of a "site" or record for entry into the ISMS database varied by taxa group. The most striking example was for terrestrial mollusks. For these species, a site was defined as all locations within 30 feet of each other, so individual records in the ISMS database could be as close together as 31 feet. For other species, the distance between locations to define sites was 100 meters. For locally-abundant mollusks, this could result in a two to ten-fold increase in the number of sites recorded in ISMS when compared to other taxa with similar distribution and abundance. Therefore, for locally-abundant mollusks, the number of records in ISMS was divided by the appropriate factor, as provided by the Step 2 panel or taxa experts, prior to the determination of the number of likely-extant sites on federal lands. The number of sites depicted on Table 3&4-4 in the Draft SEIS do not reflect this method of site determination and, therefore, are often higher than the numbers used in this Species Review Process. Additionally, Table 3&4-4 was not reproduced in the Final SEIS. Table F-2 in this appendix includes site information based on this method for site determination.

The following method was used to evaluate the number of likely-extant sites in a consistent manner that could be compared within or across taxa groups. For some species, many of the known sites are historic, having been initially located 10 to 100 years ago, and many have not been visited recently to determine if the species is still present on the site. The most recent visit to a site was used as the best indicator of recent presence. Most sites on which a species was located on or after January 1993 were assumed to be still extant. Little habitat disturbance occurred between January 1993 and the implementation of the Northwest Forest Plan. Most species required known site management under the Northwest Forest Plan, so most of these sites would have received protection under the Northwest Forest Plan. Therefore, the number of federal sites located since January 1993 was considered to approximate the number of likely-extant sites on federal lands.

The number of federal sites located or confirmed during or after January 1993, adjusted for differences in the site definition, were used to determine the general level of likely-extant sites (e.g. low, moderate, high) on federal lands. The actual thresholds for these general levels varied between, and sometimes within, taxa groups, based on the history of survey effort and difficulty of locating and identifying species. A higher number of sites is expected for even rare species that have been surveyed prior to projects for the past several years than for species that have had limited survey efforts or which are difficult for even experts to locate and identify.

Tables F-1 and F-2 reflect the corrections for site definition, definition of likely extant, and taxa-specific thresholds.

Changes in species assignments to categories between Draft and Final SEIS: Approximately 80 species were assigned to different categories, removed from, or returned to, Survey and Manage in all or part of their range, when compared to the assignments made by the 1999 Species Review Process and shown in the Draft SEIS. These changes are based on consideration of new information or reconsideration of existing information, as described above. These changes are reflected on Table 2-2 in this SEIS, and are specifically summarized on Table 2-11, *Changes to Survey and Manage Species Category Between Draft and Final SEIS for Alternative 1 Based on Additional Information and Species Review*.

The changes between Draft SEIS and Final SEIS include 12 species in all or part of their range that were proposed for removal from Survey and Manage in the Draft SEIS and now are proposed to remain in the Survey and Manage Standards and Guidelines. This change initially raised concern in the Agencies that the application of the criteria for removal may have, at least in the Draft SEIS, permitted removal decisions that were not warranted. Careful examination of the change to these 12 species was made to determine if any flaws to the process or criteria might lead to problems in the future. This examination indicated that species came back on for four main reasons.

1. One fungi species, *Ramaria couterae*, had previously been reported only from Sierra County in California, eastern Oregon, and other areas well outside the Northwest Forest Plan area. Between Draft SEIS and Final SEIS, it was found within the Northwest Forest Plan area and is now placed in Category 1B.
2. Two rare lichen species, *Chaenotheca chrysocephala* and *Chaenotheca ferruginea*, had been determined not to be closely associated with late-successional forests. New information, from asking Step 1 and 2 panel members to specifically address late-successional association and from clarifying the criteria for late-successional association to defer to the FEMAT determination in cases of uncertainty (see Appendix E), indicates these species may be associated with remnant late-successional components found in younger stands. They have now been assigned to Category 1B.
3. Two lichen species, *Lobaria oregana* and *Usnea longissima*, had been removed because they were widespread, relatively common, and it was determined that the reserve land allocations and other standards and guidelines of the Northwest Forest Plan provided a reasonable assurance of persistence. Reconsideration of portions of their range, in part because *Usnea longissima* (California and three Oregon counties) was found to be on the State of California Red List of rare and endangered species for three counties in northwestern California, led to a decision to return both species to Survey and Manage for the southern part (generally California) of their range. For this part of their range, they have been assigned to Category 1A.
4. Eight uncommon lichen species, *Bryoria tortuosa* (eastside), *Calicium viride*, *Calicium glaucellum*, *Chaenotheca furfuracea*, *Hypogymnia oceanica*, *Nephroma bellum*, *Pannaria saubinetii*, and *Usnea longissima* (Washington and most of Oregon), were reconsidered by the Step 3 panel because the 1999 panel had been divided regarding their placement, or they were identified as potential outliers in a consistency

review of placements of similar species. Because of uncertainty and the likely somewhat higher standard for returning species in the future (the provisions for adding species), the panel chose the more conservative approach of leaving them on Survey and Manage at this time. Seven species are placed in Category 1F in recognition that the number of known sites precludes the need for pre-disturbance surveys or known site management. One species, *Bryoria tortuosa*, is placed in Category 1D (but identified as pre-disturbance surveys not necessary) in recognition that the number of known sites precludes the need for pre-disturbance surveys. The current information is not sufficient to completely remove any reasonable concern for persistence. This placement permits continued examination with strategic surveys in order to more confidently determine if the reserve land allocations and other standards and guidelines of the Northwest Forest Plan provide a reasonable assurance of persistence for these species.

Given the reasons cited here, the small percentage they represent of the more than 400 species evaluated, the nature of the information that led to these decisions, and the clarification of the criteria for late-successional association made between the Draft and Final SEIS, these changes do not indicate any significant problems with the criteria for removing species from Survey and Manage. Future application of the criteria for removal from Survey and Manage is expected to continue to provide the assurance of persistence intended by these standards and guidelines. Further, the action alternatives contain provisions for adding species in the future if new information warrants such consideration.

List of Panel Participants

Step 1 Panels

Amphibian Panel

Charlie Crisafulli (1999)	Forest Service, PNW	Biologist
Deanna Olson, Ph.D. (1999, 2000)	Forest Service, PNW	Biologist

Bryophyte Panel

John Davis (1999, 2000)	U.S. Fish and Wildlife Service	Biologist
Rick Dewey, Ph.D. (1999, 2000)	Forest Service, Region 6	Botanist
Judy Harpel, Ph.D. (1999, 2000)	Forest Service, PNW	Bryologist
Robin Leshar (1999, 2000)	Forest Service, Region 6	Ecologist

Fungi Panel

Mike Castellano, Ph.D. (1999)	Forest Service, PNW	Mycologist
Thomas O'Dell, Ph.D. (1999, 2000)	Forest Service, PNW	Mycologist
Jane E. Smith (1999)	Forest Service, PNW	Mycologist

Lichen Panel

John Davis (1999, 2000)	U.S. Fish and Wildlife Service	Biologist
Chiska Derr (1999, 2000)	Forest Service, Region 6	Botanist
Linda Geiser, Ph.D. (1999)	Forest Service, Region 6	Botanist
Robin Leshar (1999, 2000)	Forest Service, Region 6	Ecologist

Mollusk Panel

Tom Burke (1999)	Forest Service, Region 6	Biologist
Nancy Duncan (1999, 2000)	Bureau of Land Management	Biologist
Karen Raftery (1999)	Forest Service, Region 5	Biologist

Vascular Plant Panel

Russell Holmes (1999, 2000)	Bureau of Land Management	Botanist
Jenny Lippert	Forest Service, Region 6	Botanist

Canada Lynx Panel

Camryn Lee (1999)	U.S. Fish and Wildlife Service	Biologist
Elaine Rybak (1999)	Forest Service, Region 6	Biologist

Great Gray Owl

Robin Bown (2000)	U.S. Fish and Wildlife Service	Biologist
Sarah Madsen (2000)	Forest Service, Region 6	Biologist

Step 2 Panels

Amphibian Panel

David Clayton (1999, 2000)	Forest Service, Region 6	Biologist
Charlie Crisafulli (1999, 2000)	Forest Service, PNW	Biologist
Steve Godwin (1999, 2000)	Bureau of Land Management	Biologist
Larry Jones (2000)	Forest Service, PNW	Biologist
Richard Nauman (1999, 2000)	Forest Service, PNW	Biologist
Kathy Nickell (1999, 2000)	Forest Service, Region 5	Biologist
Lisa Ollivier (1999, 2000)	Forest Service, PSW	Biologist
Deanna Olson, Ph.D. (1999, 2000)	Forest Service, PNW	Biologist

Bryophyte Panel

John Davis (1999, 2000)	U.S. Fish and Wildlife Service	Biologist
Rick Dewey, Ph.D. (1999, 2000)	Forest Service, Region 6	Botanist
Nancy Fredericks, Ph.D. (1999)	Forest Service, Region 6	Botanist
Judy Harpel, Ph.D. (1999, 2000)	Forest Service, PNW	Bryologist
Lance Holmberg (1999)	Forest Service, Region 6	Botanist
Robin Leshar (1999, 2000)	Forest Service, Region 6	Ecologist
Bruce Rittenhouse (1999)	Bureau of Land Management	Botanist

Fungi Panel

Mike Castellano, Ph.D. (1999, 2000)	Forest Service, PNW	Mycologist
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Thomas O'Dell, Ph.D. (1999, 2000)	Forest Service, PNW	Mycologist
Jane E. Smith (1999, 2000)	Forest Service, PNW	Mycologist
Nancy Wogen (1999, 2000)	Bureau of Land Management	Botanist

Lichen Panel

John Davis (1999, 2000)	U.S. Fish and Wildlife Service	Biologist
Chiska Derr (1999, 2000)	Forest Service, Region 6	Botanist
Nancy Fredericks, Ph.D. (1999)	Forest Service, Region 6	Botanist
Linda Geiser, Ph.D. (1999, 2000)	Forest Service, Region 6	Botanist
Robin Leshner (1999, 2000)	Forest Service, Region 6	Ecologist
Roger Rosentreter, Ph.D. (1999, 2000)	Bureau of Land Management	Botanist

Mollusk Panel

Tom Burke (1999, 2000)	Forest Service, Region 6	Biologist
Nancy Duncan (1999, 2000)	Bureau of Land Management	Biologist
Pat Olmstead (1999)	Bureau of Land Management	Fisheries Biologist
Paul Jeske (1999)	Bureau of Land Management	Manager
Karen Raftery (1999, 2000)	Forest Service, Region 5	Biologist

Vascular Plant Panel

Wayne Elliott (1999)	Bureau of Land Management	Resource Advisor
Russell Holmes (1999)	Bureau of Land Management	Botanist
Davis Isle (1999)	Forest Service, Region 5	Botanist
Jenny Lippert (1999)	Forest Service, Region 6	Botanist
Laura Potash (1999)	Forest Service, Region 6	Botanist
Joan Seevers (1999)	Bureau of Land Management	Botanist

Red Tree Vole Panel

Barbara Behan (1999, 2000)	U.S. Fish and Wildlife Service	Biologist
Brian Biswell (1999, 2000)	Forest Service, PNW	Biologist
Mike Blow (1999, 2000)	Bureau of Land Management	Biologist
Sarah Madsen (1999)	Forest Service, Region 6	Biologist

Great Gray Owl Panel

Cheryl Freisen (1999)	Forest Service, Region 6	Biologist
Eric Forsman, Ph.D. (1999)	Forest Service, PNW	Biologist
Barbara Behan (1999)	U.S. Fish and Wildlife Service	Biologist
Shane Kamrath (1999)	Forest Service, Region 6	Biologist
Matt Broyles (1999)	Bureau of Land Management	Biologist

Step 3 Panel

Robin Bown (1999, 2000) (Species Review Coordinator)	U.S. Fish and Wildlife Service	Biologist
Paula Crumpton (1999, 2000)	Forest Service, Region 5	Biologist
John Larsen (1999, 2000)	Forest Service, Region 5	Manager
Robin Leshner (1999, 2000)	Forest Service, Region 6	Ecologist
Cheryl McCaffrey (1999, 2000)	Bureau of Land Management	Botanist
Loyal Mehrhoff (1999)	U.S. Fish and Wildlife Service	Biologist
Neal Middlebrook (1999)	Bureau of Land Management	Manager
Randy Molina, Ph.D. (1999, 2000)	Forest Service, PNW	Mycologist

The following Agency taxonomic group leads or specialists assisted in clarifying some taxon-specific information:

Brian Biswell (1999, 2000)	Forest Service, PNW	Biologist
Mike Castellano, Ph.D. (1999)	Forest Service, PNW	Mycologist
Nancy Duncan (1999, 2000)	Bureau of Land Management	Biologist
Judy Harpel, Ph.D. (1999, 2000)	Forest Service, PNW	Bryologist
Russ Holmes (1999)	Bureau of Land Management	Botanist
Thomas O'Dell, Ph.D. (1999, 2000)	Forest Service, PNW	Mycologist

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
FUNGI						
<i>Acanthophysium farlowii</i> (<i>Aleurodiscus farlowii</i>)	1, 3	B	1	0	Only one known site in Northwest Forest Plan area, but under-collected. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Albatrellus avellaneus</i>	1, 3	B	3	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Albatrellus caeruleoporus</i>	1, 3	B	5	8	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Albatrellus ellisii</i>	3	B	7	6-8	Very low number of total sites in Northwest Forest Plan area. Need information on habitat and rarity. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Albatrellus flettii</i>	3	B	24	20	Low number of total sites in Northwest Forest Plan area; 80 percent federal. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Alpova alexsmithii</i>	1, 3	B	5	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Alpova olivaceotinctus</i>	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area, although under-collected. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Arcangeliiella camphorata</i> (<i>Arcangeliiella</i> sp. nov. #Trappe 12382; <i>Arcangeliiella</i> sp. nov. #Trappe 12359)	1, 3	B	9	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Arcangeliiella crassa</i>	1, 3	B	3	0	Very low number of total sites in Northwest Forest Plan area, although under-collected. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Arcangeliiella lactarioides</i>	1, 3	B	2	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Asterophora lycoperdoides</i>	3	B	3	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year survey required.	
<i>Asterophora parasitica</i>	3	B	5	0	Very low number of total sites, no recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year survey required.	
<i>Baeospora myriadophylla</i>	3	B	16	1	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre-FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Balsamia nigrens (Balsamia nigra)</i>	1, 3	B	4	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Boletus haematinus</i>	1, 3	B	1	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Boletus pulcherrimus</i>	1, 3	B	8	0	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Bondarzewia mesenterica (Bondarzewia montana)</i>	1, 2, 3	B	9	20-35	Low/moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Bridgeoporus nobilissimus (Oxyporus nobilissimus)</i>	1, 2, 3	A	3	10	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey practical; large and perennial.	
<i>Bryoglossum gracile</i>	1, 3	Off	4	0	Not closely associated with late-successional or old-growth forest; associated with subalpine meadows and boulder fields. Large areas of potential habitat protected.	
<i>Cantharellus cibarius</i>	3, 4	Off	--	--	This species does not occur in the Northwest Forest Plan area.	
<i>Cantharellus formosus</i>	1, 3	Off	24	60+	Not closely associated with late-successional or old-growth forest; most abundant in younger forest. Common.	
<i>Cantharellus subalbidus</i>	3, 4	D	18	47-110	Moderate/high number of total sites in Northwest Forest Plan area; likely under-reported so it may be more common than number of total sites indicates. Habitat broad. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Catathelasma ventricosum</i>	3	B	12	2	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Chalciporus piperatus (Boletus piperatus)</i>	3	D	57	96	Moderate/high number of total sites in Northwest Forest Plan area. Widespread. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Chamonixia caespitosa (Chamonixia pacifica sp. nov. #Trappe #12768)</i>	1, 3	B	5	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Choironomyces alveolatus</i>	1, 3	B	7	3	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Choironomyces venosus</i>	1, 3	B	1	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Chromosera cyanophylla</i> (<i>Mycena lilacifolia</i>)	3	B	30	25	Low number of total sites in Northwest Forest Plan area, most historic. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Chroogomphus loculatus</i>	1, 3	B	1	2	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Chrysomphalina grossula</i>	3	B	13	0	Low number of total sites in Northwest Forest plan area, none recent. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Clavariadelphus borealis</i>	3, 4	Off	--	--	Synonymous with <i>Clavariadelphus truncatus</i> which is also a Survey and Manage species. See <i>Clavariadelphus truncatus</i> .	
<i>Clavariadelphus ligula</i>	3, 4	B	14	18	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Clavariadelphus lovejoyae</i>	3, 4	Off	--	--	Not in Northwest Forest Plan area; this species is known only from Wyoming.	
<i>Clavariadelphus occidentalis</i> (<i>Clavariadelphus pistillaris</i>) ⁴	3, 4	B	19	35	Low/moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Clavariadelphus sachalinensis</i>	3, 4	B	4	3	Very low number of total sites in Northwest Forest Plan area; historic sites only. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Clavariadelphus subfastigiatus</i>	3, 4	B	0	1	One historic site in Northwest Forest Plan area; probably extirpated. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Clavariadelphus truncatus</i> (syn. <i>Clavariadelphus borealis</i>)	3, 4	B	22	17	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Clavicornona piperata</i> (<i>Clavicornona avellanea</i>)	3	Off	--	--	<i>Clavicornona piperata</i> passed the original FEMAT screens (the Northwest Forest Plan provides a reasonable assurance of species persistence).	
<i>Clavulina castanopes</i> v. <i>lignicola</i> (<i>Clavulina ornatipes</i>)	3, 4	B	9	1	Synonymous with <i>Clavulina castanopes</i> v. <i>lignicola</i> . Low number of total sites in Northwest Forest Plan area; most historic. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Clavulina cinera</i>	3, 4	Off	--	--	Synonymous with <i>Clavulina cristata</i> which is also a Survey and Manage species. See <i>Clavulina cristata</i> .	
<i>Clavulina cristata</i> (syn. <i>C. cinera</i>)	3, 4	Off	Many	65	Not closely associated with late-successional or old-growth forest.	
<i>Clitocybe senilis</i>	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Clitocybe subditopoda</i>	1, 3	B	4	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Collybia bakerensis</i>	1, 3	B	14	14	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Collybia racemosa</i>	3	B	30	2	Low number of total sites in Northwest Forest Plan area; most historic; half federal. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Cordyceps capitata</i>	3	B	25	15	Low number of total sites in Northwest Forest Plan area; most historic; most federal. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Cordyceps ophioglossoides</i>	3	B	11	8	Low number of total sites, only one recent Federal site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year survey required.	
<i>Cortinarius azureus</i>	3	B	N/A	0	Synonymous with <i>Cortinarius barlowensis</i> . No known sites in Northwest Forest Plan areas; probably rare. Recent surveys had not located any sites. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Cortinarius boulderensis</i>	1, 3	B	6	2	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Cortinarius cyanites</i>	3	B	N/A	0	No known sites in Northwest Forest Plan area; probably rare. Recent surveys had not located any sites. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Cortinarius magnivelatus</i>	1, 3	B	4	2	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Cortinarius olympianus</i>	1, 3	B	10	17	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Cortinarius speciosissimus</i> (<i>Cortinarius rainierensis</i>)	1, 3	B	4	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Cortinarius spilomeus</i>	3	B	1	0	Synonymous with <i>Cortinarius depauperatus</i> . No known sites in Northwest Forest Plan area; probably rare. Recent surveys had not located any sites. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Cortinarius tabularis</i>	3	B	5	0	No known sites in Northwest Forest Plan area; probably rare. Recent surveys had not located any sites. Pre-disturbance survey not practical; multi-year surveys required.	

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Cortinarius umidicola</i> (<i>Cortinarius canabarba</i>)	1, 3	B	2	1	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Cortinarius valgis</i>	3	B	N/A	0	No known sites in Northwest Forest Plan area; probably rare. Recent surveys had not located any sites. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Cortinarius variipes</i>	1, 3	B	2	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Cortinarius verrucisporus</i>	1, 3	B	N/A	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Cortinarius wiebeae</i>	1, 3	B	3	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Craterellus tubaeformis</i> (syn. <i>Cantharellus tubaeformis</i>)	3, 4	D	11	76-143	Moderate/high number of total sites in Northwest Forest Plan area; likely under-reported so it may be more common than number of total sites indicates. Habitat broad. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Cudonia monticola</i>	3	B	3	4	Very low number of total sites in Northwest Forest Plan area, although not expected to be rare. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Cyphellostereum laeve</i>	3	B	3	0	Very low number of total sites, no recent Federal sites in Northwest Forest Plan area, although under-reported. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Dermocybe humboldtensis</i>	1, 3	B	3	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Destuntzia fusca</i>	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Destuntzia rubra</i>	1, 3	B	1	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Dichostereum boreale</i> (<i>Dichostereum gramulosum</i>)	1, 3	B	2	0	Only one site in Northwest Forest Plan area, although likely under-collected. Pre-disturbance survey not practical; multi-year surveys required.	

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre-FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Elaphomyces anthracinus</i>	1, 3	B	2	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Elaphomyces subviscidus</i>	1, 3	B	8	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Endogone acrogena</i>	1, 3	B	3	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Endogone oregonensis</i>	1, 3	B	15	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Entoloma nitidum (Rhodocybe nitida)</i>	1, 3	B	9	4	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Fayodia bisphaerigera (Fayodia gracilipes)</i>	3	B	2	0	Very low number of total sites in Northwest Forest Plan area; none recent. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Fevansia aurantiaca (Alpova sp. nov. # Trappe 1966) (Alpova aurantiaca)</i>	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Galerina atkinsoniana</i>	3	B	N/A	12	Very low number of total sites in Northwest Forest Plan area, though under-collected. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; multi-year surveys required; this genus is difficult to distinguish to species.	
<i>Galerina cerina</i>	3	B	N/A	1	Very low number of total sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; multi-year surveys required; this genus is difficult to distinguish to species.	
<i>Galerina heterocystis</i>	3	E	N/A	0	No known sites in Northwest Forest Plan area at this time, need to determine potential for presence in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.	
<i>Galerina sphagnicola</i>	3	E	N/A	0	No known sites in Northwest Forest Plan area at this time, need to determine potential for presence in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.	

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre-FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Galerina vittaeformis</i>	3	B	N/A	28	Very low number of total sites in Northwest Forest Plan area. Late-successional or old-growth forest association not certain, deferring to FEMAT. Pre-disturbance survey not practical; multi-year surveys required; difficult to distinguish.	
<i>Gastroboletus imbellus</i>	1, 3	B	1	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gastroboletus ruber</i>	1, 3	B	11	4	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gastroboletus subalpinus</i>	1, 3	B	17	7	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gastroboletus turbinatus</i>	3	B	N/A	0	Very low number of total sites in Northwest Forest Plan area; rarer than originally thought. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gastroboletus vividus</i> (<i>Gastroboletus</i> sp. nov. #Trappe 2897; <i>Gastroboletus</i> sp. nov. #Trappe 7515)	1, 3	B	2	5	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gastrosuillus amaranthii</i> (<i>Gastrosuillus</i> sp. nov. #Trappe 9608)	1, 3	E	0	0	Found just outside Northwest Forest Plan area; likely habitat exists within Northwest Forest Plan, no currently known sites within NFP area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gastrosuillus umbrinus</i> (<i>Gastroboletus</i> sp. nov. #Trappes 7516)	1, 3	B	1	1	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gautieria magnicellaris</i>	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gautieria othii</i>	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gelatinodiscus flavidus</i>	1, 3	B	9	5	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Glomus radiatum</i>	1, 3	B	3	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Gomphus bonarii</i>	3	B	7	8	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gomphus clavatus</i>	3	B	25	20	Low number of total sites in Northwest Forest Plan area, although under-collected; commonly harvested for consumption (not harmed by harvest). Pre-disturbance survey not practical; multi-year surveys required; difficult to distinguish.	
<i>Gomphus floccosus</i> , In Oregon and Washington	3	Off	35	134	High number of total sites in Northwest Forest Plan area (even with lack of pre-disturbance survey requirement). High proportion of sites and likelihood of habitat in protected land allocations. Well distributed in most of its range. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence.	
<i>Gomphus floccosus</i> , In California	3	F	10	25	Low number of total sites in Northwest Forest Plan area, but this may be an artifact of limited survey effort (no pre-disturbance surveys required). May be common, uncertain concern for persistence. Wide habitat amplitude. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gomphus kauffmanii</i>	3	B	22	30	Low/moderate number of total sites in Northwest Forest Plan area; not likely under-collected or under-reported. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gymnomyces abietis</i> (<i>Gymnomyces</i> sp. nov. #Trappe 1690, 1706, 1710; <i>Gymnomyces</i> sp. nov. #Trappe 4703, 5576; <i>Gymnomyces</i> sp. nov. #Trappe 5052; <i>Gymnomyces</i> sp. nov. #Trappe 7545; <i>Martellia</i> sp. nov. #Trappe 1700; <i>Martellia</i> sp. nov. #Trappe 311; <i>Martellia</i> sp. nov. #Trappe 5903)	1, 3	B	17	1	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gymnomyces nondistincta</i> (<i>Martellia</i> sp. nov. #Trappe 649)	1, 3	B	1	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gymnopilus punctifolius</i>	1, 3	B	30	18	Moderate number of total sites in Northwest Forest Plan area, very low number of recent Federal sites. Pre-disturbance survey not practical; multi-year surveys required.	

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Gyromitra californica</i>	3, 4	B	N/A	10	Low number of known sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gyromitra esculenta</i>	3, 4	F	N/A	111	High number of total sites in Northwest Forest Plan area despite limited survey effort (no pre-disturbance surveys required); poisonous; under-reported. May be common, uncertain concern for persistence. Late-successional or old-growth forest association questionable. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gyromitra infula</i>	3, 4	B	N/A	23	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required; difficult to distinguish.	
<i>Gyromitra melaleucoides</i>	3, 4	B	N/A	12	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Gyromitra montana</i> (<i>Gyromitra gigas</i>) ⁴	3, 4	F	N/A	24-65	Moderate number of total sites Northwest Forest Plan area. May be common, uncertain concern for persistence. Well distributed. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Hebeloma olympianum</i> (<i>Hebeloma olympiana</i>)	1, 3	B	3	2	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Helvella compressa</i>	1, 3	Off	17	142	Not closely associated with late-successional or old-growth forest; frequent in younger forests and highly disturbed sites.	
<i>Helvella crassitunicata</i>	1, 3	B	19	1	Low number of total sites in Northwest Forest Plan area; most federal; few recent. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Helvella elastica</i>	1, 3	B	14	11	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Helvella maculata</i>	1, 3	B	14	3	Low number of total sites in Northwest Forest Plan area; most non-federal. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Hydnотrya inordinata</i> (<i>Hydnотrya</i> sp. nov. #Trappe 787, 792)	1, 3	B	3	4	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Hydnотrya subnix</i> (<i>Hydnотrya subnix</i> sp. nov. #Trappes #1861)	1, 3	B	1	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Hydnum repandum</i>	3	Off	83	93	Moderate/high number of total sites in Northwest Forest Plan area (even with lack of pre-disturbance survey requirement), under-reported. High proportion of sites and likelihood of habitat in protected land allocations. Well distributed in most of its range, broad habitat requirements.	
<i>Hydnum umbilicatum</i>	3	B	17	41	Low number of total sites in Northwest Forest Plan area. Rarer than previously thought. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Hydrophus marginellus (Mycena marginella)</i>	3	B	31	1	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Hygrophorus caeruleus</i>	1, 3	B	1	3	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Hygrophorus karstenii</i>	3	B	N/A	0	No information; little known. Probably rare. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Hygrophorus vernalis</i>	1, 3	B	4	3	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Hypomyces luteovirens</i>	3	B	8	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year survey required.	
<i>Leucogaster citrinus</i>	1, 3	B	7	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Leucogaster microsporus</i>	1, 3	B	7	2	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Macowanites chlorinosmus</i>	1, 3	B	11	2	Very low number of total sites in Northwest Forest Plan area; most non-federal. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Macowanites lymanensis</i>	1, 3	B	1	1	Only one known site in Northwest Forest Plan area; in campground. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Macowanites mollis</i>	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Marasmius appplanatipes</i>	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Martellia fragrans</i>	1, 3	B	3	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre-FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Martellia idahoensis</i>	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Martellia maculata</i> (<i>Elaphomyces</i> sp. nov. #Trappe 1038)	1, 3	Off	27	many dozens	This species is the correct name for what was thought to be an undescribed species (<i>Elaphomyces</i> sp. nov. #Trappe 1038). <i>Martellia maculata</i> passed FEMAT screens as adequately provided for in Northwest Forest Plan.	
<i>Martellia monticola</i>	1, 3	Off	--	--	Not known to occur in Northwest Forest Plan area.	
<i>Mycena hudsoniana</i>	1, 3	B	8	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Mycena monticola</i>	1, 3	B	6	10	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Mycena overholtsii</i>	1, 3	B	9	8	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Mycena quinaultensis</i>	1, 3	B	22	0	Low number of total sites in Northwest Forest Plan area; most historic, although likely under-collected. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Mycena tenax</i>	3	B	18	0	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Mythicomycetes corneipes</i>	3	B	8	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Neolentinus adhaerens</i>	1, 3	B	3	1	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Neolentinus kauffmanii</i>	1, 3	B	29	2	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Neourmula pouchetii</i>	1, 3	B	8	18	Low number of total sites in Northwest Forest Plan area; about half federal. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Nivatogastrium nubigenum</i>	1, 3	B	21	12	Low/moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required; timing critical; found at high elevation at snow line.	
<i>Octavianina cyanesceus</i> (<i>Octavianina</i> sp. nov. #Trappe 7502)	1, 3	B	1	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	

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<i>Octavianina macrospora</i>	1, 3	B	1	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Octavianina papyracea</i>	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Omphalina ericetorum (Phytoconis ericetorum)</i>	3, 4	Off	60	33	Low/moderate number of recent Federal sites (even with lack of pre-disturbance survey requirement), more common than thought. Well distributed. Habitat variable and very common. Moderate proportion of sites and likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence.	
<i>Otiidea leporina</i>	3, PB	B	5	13	Low number of total sites in Northwest Forest Plan area; half federal. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Otiidea onotica</i>	3, PB	F	8	159	Moderate/high number of total sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable. May be common, uncertain concern for persistence. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Otiidea smithii</i>	1,3, PB	B	2	5	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Phaeocollybia attenuata</i>	3	D	37	50	Low/moderate number of total sites in Northwest Forest Plan area, including new sites. Widespread. Habitat relatively common. Need to determine high-priority sites for management. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Phaeocollybia californica</i>	1, 3	B	11	20	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Phaeocollybia carmanahensis</i>	1, 3	Off	--	--	Synonymous with <i>Phaeocollybia oregonensis</i> , which is also a Survey and Manage species. See <i>Phaeocollybia oregonensis</i> .	
<i>Phaeocollybia dissiliens</i>	1, 3	B	4	4	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Phaeocollybia fallax</i>	3	D	45	50	Moderate number of total sites in Northwest Forest Plan area; half federal; half in reserves. Widespread; habitat relatively common. Need to determine high-priority sites for management. Pre-disturbance survey not practical; multi-year surveys required.	

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<i>Phaeocollybia gregaria</i>	1, 3	B	2	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Phaeocollybia kauffmanii</i>	1, 3	D	28	34	Low/moderate number of total sites in Northwest Forest Plan area; most new; likely under-reported. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Phaeocollybia olivacea</i>	3	B	29	30-50	Low/moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Phaeocollybia oregonensis</i> (syn. <i>Phaeocollybia carmanahensis</i>)	1, 3	B	1	2	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Phaeocollybia piceae</i>	1, 3	B	7	5	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Phaeocollybia pseudofestiva</i>	3	B	4	11	Low number of total sites in Northwest Forest Plan area. Rarer than previously thought. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Phaeocollybia scatesiae</i>	1, 3	B	7	16	Low number of total sites in Northwest Forest Plan area; few on federal lands. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Phaeocollybia sipei</i>	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Phaeocollybia spadicea</i>	3	B	20	7	Low/moderate number of total sites in Northwest Forest Plan area; included in extensive surveys but not being found. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Phellodon atratus</i> (<i>Phellodon atratum</i>)	3	B	28	20	Low number of total sites in Northwest Forest Plan area; most non-federal. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Pholiota albelata</i>	1, 3	B	28	0	Low/moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Pithya vulgaris</i>	1, 3	D	20	32-135	Moderate/high number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Plectaniamelastoma</i>	3	F	24	74	Moderate/high number of total sites in Northwest Forest Plan area. May be common, uncertain concern for persistence. Broad ecological distribution. Late-successional or old-growth forest association questionable. Pre-disturbance survey not practical; multi-year surveys required; required microscopic examination to even identify to genus.	
<i>Plectaniamilleri</i>	1, 3	B	1	9	Low/moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required; required microscopic examination to even identify to genus.	
<i>Podostroma alutaceum</i>	3	B	10	2	Low number of total sites in Northwest Forest Plan area. Under-reported and protected. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Polyzellus multiplex</i>	1,3, PB	B	11	12-19	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Pseudaleuria quinaultiana</i>	1, 3	B	4	2	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria abietina</i>	3	B	1	2	Very low number of total sites in Northwest Forest Plan area; all historic; no recent sites despite surveys. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria amyloidea</i>	1, 3	B	3	9	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria araiospora</i>	1, 3	B	7	8	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria aurantiisiccens</i>	1, 3	B	4	11	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria botrytis</i> var. <i>aurantiiramosa</i>	1, 3	B	1	1	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria celerivirescens</i>	1, 3	B	4	14	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria claviramulata</i>	1, 3	B	2	2	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria concolor</i> f. <i>marrii</i>	1, 3	B	1	1	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Ramaria concolor f. tsugina</i>	3	B	1	1	Only one known site in Northwest Forest Plan area; historic. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria conjunctipes</i> var. <i>sparsiramosa</i> (<i>Ramaria fasciculata</i> var. <i>sparsiramosa</i>)	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria coulterae</i>	3	B	0	6	Very low number of total sites in the Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria cyaneigranosa</i>	1, 3	B	6	3	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria gelatiniaurantia</i>	1, 3	B	2	8	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria gracilis</i>	1, 3	B	4	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria hilaris</i> var. <i>olympiana</i>	1, 3	B	2	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria largentii</i>	1, 3	B	2	2	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria lorithamnis</i>	1, 3	B	1	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria maculatipes</i>	1, 3	B	3	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria rainierensis</i>	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria rubella</i> var. <i>blanda</i>	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria rubribrunnescens</i>	1, 3	B	3	3	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria rubrievanescens</i>	1, 3	B	5	10	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Ramaria rubripermanens</i>	1, 3	B	1	42-75	Moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria spinulosa</i> var. <i>diminutiva</i> (<i>Ramaria spinulosa</i>)	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria stuntzii</i>	1, 3	B	8	11	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria suecica</i>	3	B	1	0	Very low number of total sites in Northwest Forest Plan area; most historic. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria thiersii</i>	1, 3	B	1	2	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Ramaria verlotensis</i>	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Rhizopogon abietis</i>	3	B	6	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; requires expert to identify; also requires multi-year surveys.	
<i>Rhizopogon atroviolaceus</i>	3	B	1	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Rhizopogon brunneiniger</i>	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Rhizopogon chamaleontinus</i> (<i>Rhizopogon</i> sp. nov. #Trappe 9432)	1, 3	B	1	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Rhizopogon elliposporus</i> (<i>Alpova</i> sp. nov. # Trappe 9730)	1, 3	B	1	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Rhizopogon evadens</i> var. <i>subalpinus</i>	1, 3	B	13	6	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Rhizopogon exiguus</i>	1, 3	B	5	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Rhizopogon flavofibrillosus</i>	1, 3	B	5	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Rhizopogon inquinatus</i>	1, 3	B	2	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Rhizopogon parksii</i> (<i>Rhizopogon</i> sp. nov. #Trappe1692; <i>Rhizopogon</i> sp. nov. #Trappe 1698)	1, 3	Off	190	many	Not closely associated with late-successional or old-growth forest. Well distributed, very common.	
<i>Rhizopogon truncatus</i>	3	D	3	0	Low/moderate number of total sites in Northwest Forest Plan area, but data missing; under-collected, may be locally abundant. Most known sites in Northwest Forest Plan area in reserves. Can be in young stands. High proportion of records and moderate likelihood of habitat in protected land allocations. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Rhodocybe speciosa</i>	1, 3	B	3	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Rickenella swartzii</i> (<i>Rickenella setipes</i>)	3	B	6	1	Very low number of total sites in Northwest Forest Plan area; only vague locations. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Russula mustelina</i>	3	B	0	0	Only one known site in Northwest Forest Plan area, no Federal sites. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Sarcodon fuscoindicus</i>	3	B	29	15	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Sarcodon imbricatus</i>	3	B	39	30	Low/moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Sarcosoma latakense</i> (<i>Plectania latakensis</i>)	1, 3	B	3	10	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Sarcosoma mexicanum</i> , all of Oregon, except Curry and Josephine Counties	3, PB	Off	6	292	High number of total sites in this portion of the Northwest Forest Plan area. Found routinely in young stands. Well distributed. Moderate proportion of sites and likelihood of habitat in protected land allocations.	
<i>Sarcosoma mexicanum</i> , Washington, California, Curry and Josephine Counties in Oregon.	3, PB	F	0	16	Low number of total sites in this portion of Northwest Forest Plan area. Late-successional or old-growth forest association questionable, may be more frequent in early seral forests. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Sarcosphaera coronaria</i> (<i>Sarcosphaera eximia</i>)	3	B	N/A	27	Low/moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Sedecula pulvinata</i>	1, 3	B	2	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Sowerbyella rhenana</i> (<i>Aleuria rhenana</i>)	1, 3, PB	B	8	8	Low number of total sites in Northwest Forest Plan area; rare. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Sparassis crispa</i>	3	D	22	5	Low number of total sites in Northwest Forest Plan area; half federal; very under-reported. Heavily harvested. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Spathularia flavida</i>	3	B	23	3	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Stagnicola perplexa</i>	3	B	8	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year survey required.	
<i>Thaxterogaster paveleki</i> (<i>Thaxterogaster</i> sp. nov. #Trappe 4867, 6242, 7427, 7962, 8520)	1, 3	B	6	0	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Thaxterogaster pingue</i>	3	Off	9	64	Moderate number of total sites in Northwest Forest Plan area (even with lack of pre-disturbance survey requirement). Widespread; locally abundant. Potential high-elevation habitat; mostly in protected land allocations. High proportion of sites and likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence.	
<i>Tremiscus helvelloides</i> (syn. <i>Phlogionis helvelloides</i>)	3, 4	B	5	35	Low/moderate number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Tricholoma venenatum</i>	1, 3	B	1	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Tricholomopsis fulvescens</i>	1, 3	B	5	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Tuber asa</i> (<i>Tuber</i> sp. nov. #Trappe 2302)	1, 3	B	1	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	
<i>Tuber pacificum</i> (<i>Tuber</i> sp. nov. #Trappe 12493)	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.	

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Total Sites Since '93 ³	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Tylophilus porphyrosporus</i> (<i>Tylophilus pseudoscaberr</i>)	1,3	D	29	2	Low/moderate number of total sites in Northwest Forest Plan area. Persistent at historic sites, even impacted ones. Pre-disturbance survey not practical; multi-year surveys required.	

¹ For taxa indicated by two scientific names, the first name is the currently accepted name, based on recent revisions. The name in parentheses is that used in the Northwest Forest Plan (Table C-3).

² Pre-FEMAT site numbers represent sites located prior to 1994.

³ Total sites include all sites identified in 1994 and later.

⁴ Species was misidentified in FEMAT.

N/A = Data not available.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	Primary Reasons for Alternative 1
LICHENS						
<i>Bryoria pseudocapillaris</i>	1, 3	B	6	2	Very low number of recent Federal sites in Northwest Forest Plan area. Narrowly distributed along coast, and typically small populations. Pre-disturbance survey not practical; difficult to key to species requiring hazardous chemical tests, microscopic examination, and high level of training; may grow intermixed with common members of the genus.	
<i>Bryoria spiralifera</i>	1, 3	B	6	2	Very low number of recent Federal sites in Northwest Forest Plan area. Narrowly distributed along coast. Pre-disturbance survey not practical; difficult to key to species requiring hazardous chemical tests, microscopic examination, and high level of training; may grow intermixed with common members of the genus.	
<i>Bryoria subcana</i>	1, 3	B	1	19	Low number of recent Federal sites in Northwest Forest Plan area. Many of the recent Federal sites may be misidentified. Narrowly distributed along coast, small populations. Pre-disturbance survey not practical; difficult to key to species requiring hazardous chemical tests, microscopic examination, and high level of training; may grow intermixed with common members of the genus.	
<i>Bryoria tortuosa</i> , WA Olympic Peninsula, WA Western Lowlands, WA Western Cascades, OR Western Cascades, OR Coast Range, OR Willamette Valley, and CA Coast Range Physiographic Provinces	1, 3	A	10	6	Very low number of recent Federal sites in this portion of the Northwest Forest Plan area. Pre-disturbance survey practical.	
<i>Bryoria tortuosa</i> ³ , WA Eastern Cascades, OR Eastern Cascades, OR Klamath, CA Klamath, and CA Cascades Physiographic Provinces	1, 3	D	8	73	Moderate number of recent Federal sites in this portion of the Northwest Forest Plan area, locally common. Widely distributed in dry forest habitat. Pre-disturbance surveys not necessary.	
<i>Buellia oidalea</i>	1, 3	E	23	1	Only one recent Federal site in Northwest Forest Plan area; few protected. Need to determine late-successional or old-growth forest association.	

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	Primary Reasons for Alternative 1
LICHENS (continued)						
<i>Calicium abietinum</i>	4	B	1	6	Very low number of recent Federal sites in Northwest Forest Plan area, though under-reported. Pre-disturbance survey not practical; extremely small, difficult to locate and identify, microscope necessary.	
<i>Calicium adaequatum</i>	4	Off	0	3	Not closely associated with late-successional or old-growth forest.	
<i>Calicium adpersum</i>	4	E	2-3	0	Little known; no new sites. Need to determine late-successional or old-growth forest association. Uncertain distribution and rarity.	
<i>Calicium glaucellum</i>	4	F	2	57	Moderate/high number of recent Federal sites in Northwest Forest Plan area; high proportion of sites in protected land allocations. May be common, uncertain concern for persistence. Wide habitat amplitude.	
<i>Calicium viride</i>	4	F	2	71	Moderate/high number of recent Federal sites in Northwest Forest Plan area; approximately half of the sites are in reserves. May be common, uncertain concern for persistence. Wide habitat amplitude.	
<i>Cetrelia cetrarioides</i>	4	E	6	17	Low number of recent Federal sites in Northwest Forest Plan area. High proportion of sites in protected land allocations. Late-successional or old-growth forest association questionable.	
<i>Chaenotheca brunneola</i>	4	Off	2	21	Not closely associated with late-successional or old-growth forest.	
<i>Chaenotheca chrysocephala</i>	4	B	1	6	Very low number of recent Federal sites in the Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; extremely small, difficult to locate and identify, microscope necessary.	
<i>Chaenotheca ferruginea</i>	4	B	0	9	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; extremely small, difficult to locate and identify, microscope necessary.	
<i>Chaenotheca furfuracea</i>	4	F	3	21	Low/moderate number of recent Federal sites, but this does not represent true rarity; considered common and therefore under-reported by specialists. Wide ecological breadth. May be common, uncertain concern for persistence.	

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	Primary Reasons for Assignment of Species to Category Under Alternative 1
LICHENS (continued)						
<i>Chaenotheca subroscida</i>	4	E	0	0	No recent Federal sites in the Northwest Forest Plan area, some uncertainty in accuracy of identification of historic sites. Late-successional or old-growth forest association questionable.	No recent Federal sites in the Northwest Forest Plan area, some uncertainty in accuracy of identification of historic sites. Late-successional or old-growth forest association questionable.
<i>Chaenothecopsis pusilla</i> (syn. <i>Chaenothecopsis subpusilla</i> , <i>Calcium asikkalense</i> , <i>Calcium floerkei</i> , <i>Calcium pusillum</i> , <i>Calcium subpusillum</i>)	4	E	0	0	No recent Federal sites in the Northwest Forest Plan area, due to morphological plasticity and long train of synonymy, significant question as to whether the specimens from historic sites are accurately identified.	No recent Federal sites in the Northwest Forest Plan area, due to morphological plasticity and long train of synonymy, significant question as to whether the specimens from historic sites are accurately identified.
<i>Cladonia norvegica</i>	3	B	1	12	Low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey very difficult, requires fertile stalks, easy to mis-identify, significant problems in identifying to species.	Low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey very difficult, requires fertile stalks, easy to mis-identify, significant problems in identifying to species.
<i>Collema nigrescens</i> in OR Klamath, CA Klamath, and CA Coast Physiographic Provinces	4	Off	2	431	High number of recent Federal sites in Northwest Forest Plan area; many new sites. Well distributed. High proportion of sites and moderate likelihood of habitat in protected land allocations.	High number of recent Federal sites in Northwest Forest Plan area; many new sites. Well distributed. High proportion of sites and moderate likelihood of habitat in protected land allocations.
<i>Collema nigrescens</i> , in Washington and Oregon, except in Oregon Klamath Physiographic Province	4	F	5	16	Low number of recent Federal sites in Northwest Forest Plan area, but not indicative of rarity because habitat is naturally rare on forests and would likely be missed in ecology plot surveys that have produced locations for other species. Late-successional or old-growth forest association questionable. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	Low number of recent Federal sites in Northwest Forest Plan area, but not indicative of rarity because habitat is naturally rare on forests and would likely be missed in ecology plot surveys that have produced locations for other species. Late-successional or old-growth forest association questionable. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
<i>Cypheium inquinans</i>	4	Off	2	29	Not closely associated with late-successional or old-growth forest.	Not closely associated with late-successional or old-growth forest.
<i>Dendriscoaulon intricatum</i>	1, 3	B	1	67	Moderate/high number of recent Federal sites in Northwest Forest Plan area, though very low populations at individual sites. Pre-disturbance survey not practical; small and difficult to detect, required expert identification.	Moderate/high number of recent Federal sites in Northwest Forest Plan area, though very low populations at individual sites. Pre-disturbance survey not practical; small and difficult to detect, required expert identification.
<i>Dermatocarpon luridum</i>	1, 3	B	6	6	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; very difficult to detect in streams, and difficult to identify to species.	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; very difficult to detect in streams, and difficult to identify to species.
<i>Erioderma sorediatum</i>	1, 3	Off	4	5	Not closely associated with late-successional or old-growth forest.	Not closely associated with late-successional or old-growth forest.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	
LICHENS (continued)						
<i>Heterodermia leucomelos</i> (syn. <i>Anaptychia leucomelaena</i> , <i>Heterodermia leucomelaena</i>)	1, 3	Off	34	0	Not closely associated with late-successional or old-growth forest.	
<i>Heterodermia stichensis</i>	3	E	0	0	No known sites in Northwest Forest Plan area at this time, need to determine potential for presence in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.	
<i>Hydrothyria venosa</i>	1, 3	Off	35	89	Moderate/high number of recent Federal sites in Northwest Forest Plan area (even with lack of pre-disturbance survey requirement). High proportion of sites in protected land allocations. Well distributed. Reserves and provisions, including Riparian Reserves and Aquatic Conservation Strategy objectives, of the Northwest Forest Plan provide for a reasonable assurance of species persistence.	
<i>Hypogymnia duplicata</i> (syn. <i>Hypogymnia elongata</i>)	1, 2, 3	A	14	56	Low/moderate number of recent Federal sites in Northwest Forest Plan area; most federal. Pre-disturbance survey practical.	
<i>Hypogymnia oceanica</i>	1, 3	F	3	223	High number of recent Federal sites in Northwest Forest Plan area, large increase in sites since FEMAT. Well distributed, broad ecological amplitude. Moderate proportion of sites and likelihood of habitat in protected land allocations.	
<i>Hypogymnia vittata</i> (<i>Hygornia vittata</i>)	3	E	0	0	No known sites in Northwest Forest Plan area at this time but suspected habitat, need to determine potential for presence in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.	
<i>Hypotrachyna revoluta</i> (syn. <i>Parmelia revoluta</i>)	3	E	0	1	Only one known site in the Northwest Forest Plan area, no recent sites. Late-successional or old-growth forest association questionable.	
<i>Kaemefeltia californica</i> (<i>Cetraria californica</i>)	1, 3	Off	41	5	Not closely associated with late-successional or old-growth forest.	
<i>Leioderma solediatum</i>	1, 3	Off	1	1	Not closely associated with late-successional or old-growth forest.	
<i>Leptogium brebissonii</i>	1, 3	Off	0	7	Not closely associated with late-successional or old-growth forest.	

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre-FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	Primary Reasons for Alternative 1
LICHENS (continued)						
<i>Leptogium burnetiae</i> var. <i>hirsutum</i> (syn. <i>Leptogium hirsutum</i>)	4	A	1	1	Only one known site in Northwest Forest Plan area; no recent Federal sites. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.	
<i>Leptogium cyanescens</i>	4	A	0	3	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.	
<i>Leptogium rivale</i>	1, 3	B	2	28	Low/moderate number of recent Federal sites in Northwest Forest Plan area. Need to determine late-successional or old-growth forest association. Pre-disturbance survey not practical; very difficult to detect; very small and occurs submerged in streams, also on the downstream sides and beneath large boulders.	
<i>Leptogium saturninum</i>	4	Off	3	23	Not closely associated with late-successional or old-growth forest.	
<i>Leptogium teretiusculum</i>	4	E	2	3	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.	
<i>Lobaria hallii</i>	1, 3	Off	44	301	High number of recent Federal sites in Northwest Forest Plan area. Not closely associated with late-successional or old-growth forest, well distributed, broad ecological amplitude. Moderate proportion of sites in protected land allocations. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	
<i>Lobaria limita</i>	1, 2, 3	A	46	42	Limit to variety <i>tenuior</i> ; other variety not closely associated with late-successional or old-growth forest. Low/moderate number of recent Federal sites in Northwest Forest Plan area despite inclusion in extensive ecology plot and lichen surveys. Low density/number of individuals at sites. Pre-disturbance survey practical.	
<i>Lobaria oregana</i> , In Oregon and Washington	4	Off	42	448	High number of recent Federal sites in this portion of the Northwest Forest Plan area. Well distributed. High likelihood of habitat in protected land allocations. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	
LICHENS (continued)						
<i>Lobaria oregana</i> , In California	4	A	0	6	Low number of recent Federal sites in this portion of the Northwest Forest Plan area. Pre-disturbance surveys practical.	
<i>Lobaria pulmonaria</i>	4	Off	70	1808	Very high number of recent Federal sites in Northwest Forest Plan area. Well distributed. High proportion of sites and moderate likelihood of habitat in protected land allocations. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	
<i>Lobaria scrobiculata</i>	4	Off	26	152	Not closely associated with late-successional or old-growth forest. Common; widespread.	
<i>Loxosporopsis corallifera</i> (<i>Loxospora</i> sp. nov. "corallifera")	1, 3	Off	1	39	Not closely associated with late-successional or old-growth forest. Widespread, but spotty distribution.	
<i>Microcalicium arenarium</i>	4	B	0	0	Very few sites in the Northwest Forest Plan area, no recent Federal sites. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; extremely small, difficult to locate and identify, microscope necessary.	
<i>Mycocalicium subtile</i>	4	Off	0	8	Not closely associated with late-successional or old-growth forest.	
<i>Nephroma bellum</i>	4	F	9	117	High number of recent Federal sites in Northwest Forest Plan area (even with lack of pre-disturbance survey requirement). Broad ecological distribution. May be common, uncertain concern for persistence.	
<i>Nephroma helveticum</i>	4	Off	36	304	High number of recent Federal sites in Northwest Forest Plan area. Well distributed. High proportion of sites and high likelihood of habitat in protected land allocations. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	
<i>Nephroma isidiosum</i>	3	E	0	0	No known sites in Northwest Forest Plan area, but suspected habitat on Federal lands, need to determine range in Northwest Forest Plan area. Late-successional or old-growth forest association unknown.	

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	Primary Reasons for Alternative 1
LICHENS (continued)						
<i>Nephroma laevigatum</i>	4	Off	22	134	High number of recent Federal sites in Northwest Forest Plan area. Well distributed. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	High number of recent Federal sites in Northwest Forest Plan area. Well distributed. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
<i>Nephroma occultum</i>	1, 3	B	21	74	Low/moderate number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance surveys not practical; canopy lichen, presence in litterfall is unpredictable, would likely require climbing of very old trees to confirm presence, this would be a significant safety risk.	Low/moderate number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance surveys not practical; canopy lichen, presence in litterfall is unpredictable, would likely require climbing of very old trees to confirm presence, this would be a significant safety risk.
<i>Nephroma parile</i>	4	Off	12	60	Not closely associated with late-successional or old-growth forest. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	Not closely associated with late-successional or old-growth forest. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
<i>Nephroma resupinatum</i>	4	Off	23	1026	Not closely associated with late-successional or old-growth forest. Well distributed. Moderate proportion of sites and likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	Not closely associated with late-successional or old-growth forest. Well distributed. Moderate proportion of sites and likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
<i>Niebla cephalota</i> (syn. <i>Desmazieria cephalota</i> , <i>Ramalina cephalota</i>)	1, 3	A	9	2	Very low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.	Very low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.
<i>Pannaria leucostictoides</i> (syn. <i>Fuscopannaria leucostictoides</i>)	4	Off	10	56	Not closely associated with late-successional or old-growth forest. Well distributed. High proportion of sites and likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	Not closely associated with late-successional or old-growth forest. Well distributed. High proportion of sites and likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	Primary Reasons for Assignment of Species to Category Under Alternative 1
LICHENS (continued)						
<i>Pannaria mediterranea</i> (syn. <i>Fuscopannaria mediterranea</i>)	4	Off	2	8	Not closely associated with late-successional or old-growth forest. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	Not closely associated with late-successional or old-growth forest. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
<i>Pannaria rubiginosa</i>	1, 3	E	7	8	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.
<i>Pannaria saubinetii</i>	4	F	12	114	High number of recent Federal sites in the Northwest Forest Plan area. Widespread in Oregon, but not Washington. May be common, uncertain concern for persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	High number of recent Federal sites in the Northwest Forest Plan area. Widespread in Oregon, but not Washington. May be common, uncertain concern for persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
<i>Peltigera collina</i>	4	Off	36	420	Not closely associated with late-successional or old-growth forest. Common. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	Not closely associated with late-successional or old-growth forest. Common. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
<i>Peltigera neckeri</i>	4	Off	6	7	Not closely associated with late-successional or old-growth forest. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	Not closely associated with late-successional or old-growth forest. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
<i>Peltigera pacifica</i>	4	E	6	29	Low/moderate number of recent Federal sites in Northwest Forest Plan area but limited survey effort. Late-successional or old-growth forest association questionable. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	Low/moderate number of recent Federal sites in Northwest Forest Plan area but limited survey effort. Late-successional or old-growth forest association questionable. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
<i>Pilophorus nigricaulis</i>	1, 3	Off	7	8	Not closely associated with late-successional or old-growth forest.	Not closely associated with late-successional or old-growth forest.
<i>Platismatia lacunosa</i>	4	C	9	42	Moderate number of recent Federal sites in Northwest Forest Plan area; most in reserve allocations. Uncommon, but not rare. Need to determine high-priority sites for management. Air quality concerns beyond purview of Northwest Forest Plan ; air quality managed under other laws. Pre-disturbance survey practical.	Moderate number of recent Federal sites in Northwest Forest Plan area; most in reserve allocations. Uncommon, but not rare. Need to determine high-priority sites for management. Air quality concerns beyond purview of Northwest Forest Plan ; air quality managed under other laws. Pre-disturbance survey practical.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods) ¹					
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
LICHENS (continued)					
<i>Pseudocyphellaria anomala</i>	4	Off	38	862	High number of recent Federal sites in Northwest Forest Plan area. Well distributed. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
<i>Pseudocyphellaria anthraspis</i>	4	Off	51	1667	Very high number of recent Federal sites in Northwest Forest Plan area. Well distributed. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
<i>Pseudocyphellaria crocata</i>	4	Off	17	194	High number of recent Federal sites in Northwest Forest Plan area. Well distributed. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
<i>Pseudocyphellaria sp. 1</i> (<i>Pseudocyphellaria mougeotiana</i>)	1, 3	B	0	1	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; taxonomic difficulties in identifying species, difficult for experts.
<i>Pseudocyphellaria rainierensis</i>	1, 2, 3	A	9	98	Moderate/high number of recent Federal sites in Northwest Forest Plan area, though few individuals per site, rare on the landscape level; still rare. Sporadic distribution even in suitable habitat. Sensitive to pollution. Pre-disturbance survey practical.
<i>Pyrrhospora quercea</i> (syn. <i>Lecidea quercea</i> , <i>Protoblastenia quercea</i>)	1, 3	E	11	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.
<i>Ramalina pollinaria</i>	3	E	8	1	Only one recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	Primary Reasons for Assignment of Species to Category Under Alternative 1
LICHENS (continued)						
<i>Ramalina thrausta</i>	4	A	3	26	Low/moderate number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable. Pre-disturbance survey practical.	Low/moderate number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable. Pre-disturbance survey practical.
<i>Stenocybe clavata</i>	4	E	0	<11	Low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.	Low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.
<i>Stenocybe major</i>	4	Off	2	4	Not closely associated with late-successional or old-growth forest.	Not closely associated with late-successional or old-growth forest.
<i>Sticta arctica</i>	1, 3	Off	0	0	Not closely associated with late-successional or old-growth forest.	Not closely associated with late-successional or old-growth forest.
<i>Sticta beauvoisii</i>	4	Off	0	--	This species does not occur in the Northwest Forest Plan area. The taxon referred to under this name is probably <i>Sticta weigelii</i> that passed the FEMAT screens for being protected by the Northwest Forest Plan.	This species does not occur in the Northwest Forest Plan area. The taxon referred to under this name is probably <i>Sticta weigelii</i> that passed the FEMAT screens for being protected by the Northwest Forest Plan.
<i>Sticta fuliginosa</i>	4	Off	33	198	High number of recent Federal sites in Northwest Forest Plan area. Well distributed, broad habitat. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	High number of recent Federal sites in Northwest Forest Plan area. Well distributed, broad habitat. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
<i>Sticta limbata</i>	4	Off	11	103	Moderate/high number of recent Federal sites in Northwest Forest Plan area. Well distributed, broad habitat. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	Moderate/high number of recent Federal sites in Northwest Forest Plan area. Well distributed, broad habitat. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
<i>Teloschistes flavicans</i>	1, 3	A	16	2	Very low number of recent Federal sites in Northwest Forest Plan area, occurs along narrow coastal band. Pre-disturbance survey practical; distinctive.	Very low number of recent Federal sites in Northwest Forest Plan area, occurs along narrow coastal band. Pre-disturbance survey practical; distinctive.
<i>Tholarna dissimilis</i> , south of Columbia River	1, 3	B	4	1	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; cryptic and small or unreachable for surveys where in tops of trees.	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; cryptic and small or unreachable for surveys where in tops of trees.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	
LICHENS (continued)						
<i>Tholurna dissimilis</i> , north of Columbia River	1, 3	Off	4	7	Low number of recent Federal sites in Northwest Forest Plan area, but habitat is very poorly surveyed and difficult to locate without focused surveys. Most sites and high elevation habitat is within protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence.	
<i>Usnea hesperia</i>	1, 3	B	0	7	Very low number of recent Federal sites in Northwest Forest Plan area; few protected. Pre-disturbance survey not practical; very difficult to identify members of this genus to species.	
<i>Usnea longissima</i> , In California, and in Curry, Josephine and Jackson Counties, Oregon	4	A	0	10	Low number of recent Federal sites in Northwest Forest Plan area. On California Red List. Pre-disturbance survey not practical.	
<i>Usnea longissima</i> , In Oregon, except in Curry, Josephine and Jackson Counties, and in Washington	4	F	4	93-119	Moderate/high number of recent Federal sites in Northwest Forest Plan area. Wide geographic distribution, spotty distribution within suitable habitat; dispersal capability limited. May be common, uncertain concern for persistence. Moderate proportion of sites and moderate likelihood of habitat in protected land allocations. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.	
BRYOPHYTES						
<i>Antitrichia curtipendula</i>	4	Off	204	206	High number of recent Federal sites in Northwest Forest Plan area (even with lack of pre-disturbance survey requirement) under-reported. Well distributed, broad habitat. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan likely to provide for a reasonable assurance of species persistence.	
<i>Bartramioopsis lescurii</i>	1, 3	Off	2	--	Not closely associated with late-successional or old-growth forest; rock talus.	
<i>Brotherella roellii</i>	1, 3, PB	E	5	0	No recent Federal sites in Northwest Forest Plan area; all historic. Late-successional or old-growth forest association questionable.	

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TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	Primary Reasons for Alternative 1
BRYOPHYTES (continued)						
<i>Buxbaumia viridis</i> ³	PB	D	14	283	High number of recent Federal sites in Northwest Forest Plan area. Moderate proportion of sites and likelihood of habitat in protected land allocations. Pre-disturbance survey not necessary.	Moderate/high number of total sites in Northwest Forest Plan area; most sites historic; half federal. Pre-disturbance survey not practical; identification to genus possible in field, identification to species requires microscopic examination; detection difficult (cryptic).
<i>Diplophylum albicans</i>	1, 3	D	62	3		Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; identification to genus possible in field, identification to species requires microscopic examination; detection difficult (cryptic).
<i>Diplophylum plicatum</i>	1, 2	B	21	24		Not closely associated with late-successional or old-growth forest.
<i>Douinia ovata</i>	4	Off	23	23		No recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; identification difficult, need detailed microscope work to identify species.
<i>Encalypta brevicolla v. crumiana</i>	1, 3	B	2	0		No recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; small and difficult to locate; lab identification required; survey of cliffs may be dangerous.
<i>Herbertus aduncus</i>	1, 3	B	4	0		Not closely associated with late-successional or old-growth forest; Saddle Mountain species; North Pacific disjunct; cliff associate.
<i>Herbertus sakuraii</i>	1, 3	Off	1	0		No recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; small and difficult to locate; identification difficult.
<i>Iwatsukiella leucotricha</i>	1, 3	B	2	0		Very low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; need expert to identify; very small difficult to locate and detect.
<i>Kurzia makinoana</i>	1, 2	B	4	4		Only one recent Federal site in Northwest Forest Plan area. Pre-disturbance survey not practical; taxonomic variety problem; expert identification required.
<i>Marsupella emarginata v. aquatica</i>	1, 2	B	1	1		

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TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	Primary Reasons for Alternative 1
BRYOPHYTES (continued)						
<i>Orthodontium gracile</i>	1, 3	B	27	few	Very low number of recent Federal sites in Northwest Forest Plan area; most non-federal in State parks. Pre-disturbance survey not practical; easily confused with other members of the genus, identification to species requires reproductive structures that are often absent.	
<i>Plagiochila satoi</i>	1, 3	Off	3	0	Now considered part of common and widespread species, <i>Plagiochila asplenioides</i> , that passed FEMAT screens as adequately provided for in Northwest Forest Plan.	
<i>Plagiochila semidecurrens</i>	1, 3	Off	1	0	Not closely associated with late-successional or old-growth forest; Saddle Mountain species; North Pacific disjunct; cliff associate.	
<i>Pleuroziopsis ruthenica</i>	1, 3	Off	1	0	Highly likely this species does not occur in the Northwest Forest Plan area; only one old site and the identification of this site is very questionable	
<i>Ptilidium californicum</i> , California only	1, 2, PB	A	0	~30	Low/moderate number of recent Federal sites in Northwest Forest Plan area in California. Very limited distribution. Pre-disturbance survey practical.	
<i>Ptilidium californicum</i> , Washington and Oregon	1, 2, PB	Off	1	361	High number of recent Federal sites in this portion of the Northwest Forest Plan area. This portion of the range was not indicated of concern by FEMAT process. Northwest Forest Plan was considered to provide for a reasonable assurance of species persistence.	
<i>Racomitrium aquaticum</i>	1, 3	B	24	6	Very low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; expert identification required difficult genus taxonomically.	
<i>Radula brunnea</i>	1, 3	Off	1	0	Not closely associated with late-successional or old-growth forest; Saddle Mountain species; North Pacific disjunct; cliff associate.	
<i>Rhizomnium nudum</i>	PB	B	48	16	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; required difficult lab work to identify to species, even the experts can confuse this species.	
<i>Schistostega pennata</i>	PB	A	10	16	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical; distinctive.	
<i>Scouleria marginata</i>	4	Off	10	4	Not closely associated with late-successional or old-growth forest.	

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TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	
<i>Tetraphis geniculata</i>	1, 3, PB	A	6	24	Low number of recent Federal sites in Northwest Forest Plan area Pre-disturbance survey practical.	
<i>Tritomaria exsectiformis</i>	1, 2	B	3	7	Very low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; lab verification required; small and difficult to detect as often intermixed with other species; expert verification required.	
<i>Tritomaria quinqueidentata</i>	1, 3	B	4	0	No recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; need expert identification.	
<i>Ulota megalospora</i>	PB	Off	37	1303	Not closely associated with late-successional or old-growth forest. Common.	
VERTEBRATES						
Del Norte salamander <i>Plethodon elongatus</i> ³	2, PB	D	400-500	450-600	Moderate/high number of recent Federal sites in Northwest Forest Plan area from extensive surveys for several years, 40 percent in reserves. Need to determine high-priority sites for management. Pre-disturbance survey not necessary.	
Larch Mountain salamander <i>Plethodon larselli</i>	2, PB	A	78	19-34	Low/moderate number of recent Federal sites in Northwest Forest Plan area despite extensive surveys. Pre-disturbance survey practical.	
Shasta salamander <i>Hydromantes shastae</i>	1, 2, PB	A	46	4	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.	
Siskiyou Mountains salamander <i>Plethodon stormi</i>	1, 2, PB	C	48	128	Moderate/high number of recent Federal sites in Northwest Forest Plan area. Limited range/habitat. Need to determine high-priority sites for management. Restricted habitat; not likely to find many new sites with project surveys. Pre-disturbance survey practical.	
Van Dyke's salamander <i>Plethodon vandykei</i> (Cascade population only)	2	A	24	8	Low number of recent Federal sites in Northwest Forest Plan area; low level of survey yet. Need to determine late-successional or old-growth forest association but deferring to FEMAT. Restricted habitat; not likely to find many new sites with project surveys. Pre-disturbance survey practical.	

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹					
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
VERTEBRATES (continued)					
Great Gray Owl <i>Strix nebulosa</i>	PB	C	--	--	Question persistence concern. Have enough information to develop species-specific management. Concerns more related more to non-late-successional or old-growth forest issues and juxtaposition of habitat; landscape issues. Need to determine high-priority sites for management (such as nests) and determine appropriate management at sites. Pre-disturbance survey practical.
Red Tree Vole <i>Arborimus longicaudus</i>	2	C	245-310	114-323	Moderate number of recent Federal sites in the Northwest Forest Plan area, extensive recent surveys in some areas. Need to determine appropriate management for this species, including high-priority sites. Pre-disturbance survey practical. (114 confirmed active nests; remainder are possibly active, not confirmed.)
MOLLUSKS					
<i>Ancotrema voyanum</i>	PG	E	8	26	Low number of recent Federal sites in the Northwest Forest Plan area, but with little survey effort to date. Late-successional or old-growth forest association questionable. Riparian Reserves may protect some habitat.
<i>Cryptomastix devia</i>	1, 2	A	22	4	Very low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.
<i>Cryptomastix hendersoni</i>	1, 2	A	17	17	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.
<i>Deroceras hesperium</i>	1, 2	B	3	2	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; look-alike species area common, species is poorly described and requires an expert to identify at this time.
<i>Fluminicola n. sp. 1</i>	1, 2, PG	A	10	1	Only one recent Federal site in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
<i>Fluminicola n. sp. 2</i>	1, 2	A	1	0	Only one known site in Northwest Forest Plan area, no Federal sites. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹					
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
MOLLUSKS (continued)					
<i>Fluminicola n. sp. 3</i>	1, 2, PG	A	3	1	Only one recent Federal site in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
<i>Fluminicola n. sp. 11</i>	1, 2, PG	A	2	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
<i>Fluminicola n. sp. 14</i>	1, 2	A	9	1	Only one recent Federal site in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
<i>Fluminicola n. sp. 15</i>	1, 2	A	4	0	No recent Federal sites in Northwest Forest Plan. Pre-disturbance survey practical.
<i>Fluminicola n. sp. 16</i>	1, 2	A	11	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
<i>Fluminicola n. sp. 17</i>	1, 2	A	2	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
<i>Fluminicola n. sp. 18</i>	1, 2	A	4	2	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
<i>Fluminicola n. sp. 19</i>	1, 2, PG	A	0	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
<i>Fluminicola n. sp. 20</i>	1, 2, PG	A	0	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
<i>Fluminicola seminalis</i>	1, 2, PG	A	30	3	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association needs to be determined but deferring to FEMAT. Pre-disturbance survey practical.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	
MOLLUSKS (continued)						
<i>Helminthoglypta hertleini</i>	1, 2	B	10	6	Very low number of recent Federal sites in Northwest Forest Plan area; most non-federal. Pre-disturbance survey not practical; requires identification by a limited number of experts; morphological variation common at the edge of its range.	
<i>Helminthoglypta talmadgei</i>	1, 2	A	19	50-74	Moderate number of recent Federal sites in Northwest Forest Plan area; some sites may be mis-identified. Pre-disturbance survey practical.	
<i>Hemphillia burringtoni (Hemphillia burringtoni)</i>	1, 2	A	1	20-30	Low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.	
<i>Hemphillia glandulosa</i>	1, 2	C	2	72-108	Moderate number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.	
<i>Hemphillia malonei</i>	1, 2	C	4	80-120	Moderate number of recent Federal sites in Northwest Forest Plan area but clumped. Pre-disturbance survey practical.	
<i>Hemphillia pantherina</i>	1, 2	B	1	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; no specimens available, described characteristics may not well represent the species as they are based on limited specimens, expert identification required.	
<i>Juga (O) n. sp. 2</i>	1, 2	A	26	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.	
<i>Juga (O) n. sp. 3</i>	1, 2	A	5	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.	
<i>Lyogyrus n. sp. 1</i>	1, 2	A	11	17	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.	
<i>Lyogyrus n. sp. 2</i>	1, 2	A	1	1	One recent Federal site in Northwest Forest Plan area which is at risk. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.	

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	
MOLLUSKS (continued)						
<i>Lyogyrus n. sp. 3</i>	1, 2	A	1	0	One known site in Northwest Forest Plan area (non-federal) which is at risk, not recent. Pre-disturbance survey practical.	
<i>Megomphix hemphilli</i> South of south boundary of Lincoln, Bentonn and Linn Counties	1, 2	F	3	250-350	Moderate/high number of recent Federal sites in Northwest Forest Plan area. May be common, uncertain concern for persistence. Narrow habitat breadth though components may be fairly common.	
<i>Megomphix hemphilli</i> North of south boundary of Lincoln, Benton, and Linn Counties	1, 2	A	8	70-100	Moderate number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.	
<i>Monadenia chaceana</i>	1, 2	B	16	32	Low/moderate number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; expert identification required and even experts may disagree.	
<i>Monadenia churchi</i>	1, 2	F	41	220-330	High number of recent Federal sites in Northwest Forest Plan area, though restricted to a limited range. May be common, uncertain concern for persistence. Pre-disturbance survey practical.	
<i>Monadenia fidelis klamathica</i>	PG	B		8	Very low number of recent Federal sites in Northwest Forest Plan area, but with little survey effort to date. Pre-disturbance survey not practical; defining characteristics only relative in nature, juveniles cannot be identified to species, and many look-alikes, expert identification required.	
<i>Monadenia fidelis minor</i>	1, 2	A	9	6	Very low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.	
<i>Monadenia fidelis ochromphalus</i>	PG	B	30	35	Low/moderate number of recent Federal sites in Northwest Forest Plan area, but with little survey effort. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; defining characteristics only relative in nature, juveniles cannot be identified to species, and many look-alikes, expert identification required.	
<i>Monadenia troglodytes troglodytes</i>	1, 2	A	10	0	No recent Federal sites in Northwest Forest Plan area. Very localized; cave mouths. Pre-disturbance survey practical.	
<i>Monadenia troglodytes wintu</i>	1, 2	A	7	0	No recent Federal sites in Northwest Forest Plan area; none recent. Very localized; cave mouths. Pre-disturbance survey practical.	

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	Primary Reasons for Alternative 1
MOLLUSKS (continued)						
<i>Oreohelix n. sp.</i>	1, 2	A	1	54	Low/moderate number of recent Federal sites in Northwest Forest Plan area, but identification of individuals at sites questionable, needs verification. Some known sites lost in Tyee fire, species still rare. Pre-disturbance survey practical.	Low/moderate number of recent Federal sites in Northwest Forest Plan area, but identification of individuals at sites questionable, needs verification. Some known sites lost in Tyee fire, species still rare. Pre-disturbance survey practical.
<i>Pristoloma aricum crateris</i>	1, 2, PG	B	2	11	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; very small; forest floor dweller (2.75 mm), expert identification required.	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; very small; forest floor dweller (2.75 mm), expert identification required.
<i>Prophysaon coeruleum</i> , In Washington and California	1, 2	A	1	30	Low number of recent Federal sites in this portion of the Northwest Forest Plan area. Pre-disturbance survey practical.	Low number of recent Federal sites in this portion of the Northwest Forest Plan area. Pre-disturbance survey practical.
<i>Prophysaon coeruleum</i> , In Oregon	1, 2	Off	1	500-1050	High number of recent Federal sites in this portion of the Northwest Forest Plan area. Habitat relatively common, broad habitat requirements. Likelihood of habitat in Late-Successional Reserves and Riparian Reserves probably high.	High number of recent Federal sites in this portion of the Northwest Forest Plan area. Habitat relatively common, broad habitat requirements. Likelihood of habitat in Late-Successional Reserves and Riparian Reserves probably high.
<i>Prophysaon dubium</i>	1, 2	Off	2	300-500	High number of recent Federal sites in Northwest Forest Plan area. Widespread distribution and habitat. Broad ecological amplitude. Likelihood of habitat in Late-Successional Reserves and Riparian Reserves probably high.	High number of recent Federal sites in Northwest Forest Plan area. Widespread distribution and habitat. Broad ecological amplitude. Likelihood of habitat in Late-Successional Reserves and Riparian Reserves probably high.
<i>Trilobopsis roperi</i>	1, 2	A	6	49	Low/moderate number of recent Federal sites in Northwest Forest Plan area. Highly localized distribution. Pre-disturbance survey practical.	Low/moderate number of recent Federal sites in Northwest Forest Plan area. Highly localized distribution. Pre-disturbance survey practical.
<i>Trilobopsis tehamana</i>	1, 2	A	6	0	No recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.	No recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.
<i>Vertigo n. sp.</i>	1, 2	A	0	1	Only one known site in Northwest Forest Plan area. Pre-disturbance survey practical, but difficult; very small.	Only one known site in Northwest Forest Plan area. Pre-disturbance survey practical, but difficult; very small.
<i>Vespericola pressleyi</i>	1, 2	A	18	1	Only one recent Federal site in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.	Only one recent Federal site in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
<i>Vespericola shasta</i>	1, 2	A	13	2	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
<i>Vorticifex klamathensis sinitisini</i>	1, 2	E	2	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.
<i>Vorticifex n. sp. 1</i>	1, 2	E	2	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).¹

TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
VASCULAR PLANTS					
<i>Allotropa virgata</i>	1, 2	Off	160	957	High number of recent Federal sites in Northwest Forest Plan area. Well distributed. Moderate proportion of sites and high likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence.
<i>Arceuthobium tsugense mertensiana</i> , In Washington only	4	F	unknown	8 ⁴	Previously changed to only include subspecies in Washington and moved to Component 4. Low number of recent Federal sites in Northwest Forest Plan area, but all sites and most habitat in reserves. Mountain Hemlock parasite.
<i>Bensoniella oregana</i> , In California only	1, 2	A	7	3	Very low number of recent Federal sites in Northwest Forest Plan area; two federal; one introduced. Pre-disturbance survey practical.
<i>Botrychium minganense</i> In Oregon and California	1, 2	A	0-6 ⁵	0-1 ⁵	Very low number of recent Federal sites in Northwest Forest Plan area; no mitigating information. Need to determine high-priority sites for management. Pre-disturbance survey practical.
<i>Botrychium minganense</i> , In Washington	1, 2	Off	47-74 ⁵	30-42 ⁵	Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. High proportion of sites in protected land allocations.
<i>Botrychium montanum</i>	1, 2	A	32	21	Low number of recent Federal sites in Northwest Forest Plan area; no information to indicate that persistence is not a concern. Need to determine high-priority sites for management. Pre-disturbance survey practical.
<i>Clintonia andrewsiana</i>	1, 2	Off	15	3	Not closely associated with late-successional or old-growth forest. 97% probability of Outcome A and B in FEMAT.
<i>Coptis asplenifolia</i>	1, 2	A	4	9	Very low number of recent Federal sites in Northwest Forest Plan area. Very restricted range; not expected outside northwest Washington. Pre-disturbance survey practical.
<i>Coptis trifolia</i>	1, 2	A	2	1	Only one recent Federal site in Northwest Forest Plan area. Very small range. Not likely to find many new sites with project surveys. Pre-disturbance survey practical.
<i>Corydalis aquae-gelidae</i>	1, 2	C	101	3	Moderate number of total Federal sites in Northwest Forest Plan area, though few are recent. Temperature sensitive. Pre-disturbance survey practical.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹						
TAXA GROUP Species	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1	Primary Reasons for Assignment of Species to Category Under Alternative 1
VASCULAR PLANTS (continued)						
<i>Cypripedium fasciculatum</i> (all of range)	1, 2	C	524	421	High number of recent Federal sites in Northwest Forest Plan area but many sites with very small populations; still at risk. Expand to apply to all range within Northwest Forest Plan. Need to determine high-priority sites for management. Pre-disturbance survey practical.	High number of recent Federal sites in Northwest Forest Plan area but many sites with very small populations; still at risk. Expand to apply to all range within Northwest Forest Plan. Need to determine high-priority sites for management. Pre-disturbance survey practical.
<i>Cypripedium montanum</i> (all of range)	1, 2	C	253	127	Moderate/high number of recent Federal sites in Northwest Forest Plan area, but many sites with very low populations; still at risk. Expand to apply to all range within Northwest Forest Plan. Need to determine high-priority sites for management. Pre-disturbance survey practical.	Moderate/high number of recent Federal sites in Northwest Forest Plan area, but many sites with very low populations; still at risk. Expand to apply to all range within Northwest Forest Plan. Need to determine high-priority sites for management. Pre-disturbance survey practical.
<i>Eucephalus vialis</i> (<i>Aster vialis</i>)	1, 2	A	33	20	Low number of recent Federal sites in Northwest Forest Plan area. Populations isolated. Gap species in forests. Pre-disturbance survey practical.	Low number of recent Federal sites in Northwest Forest Plan area. Populations isolated. Gap species in forests. Pre-disturbance survey practical.
<i>Galium kamischaticum</i> - Olympic Peninsula, WA Eastern Cascades, and OR & WA Western Cascades Physiographic Provinces - south of Snoqualmie Pass	1, 2	A	5-6 ⁵	0 ⁵ -2	Very low number of recent Federal sites in Northwest Forest Plan area; very rare. Restricted habitat; not likely to find many new sites with project surveys. Pre-disturbance survey practical.	Very low number of recent Federal sites in Northwest Forest Plan area; very rare. Restricted habitat; not likely to find many new sites with project surveys. Pre-disturbance survey practical.
<i>Galium kamischaticum</i> - WA Western Cascades province - North of Snoqualmie Pass	1, 2	Off	42-82 ⁵	0 ⁵ -17	Low/moderate number of recent Federal sites in Northwest Forest Plan area. High proportion of sites and high likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence	Low/moderate number of recent Federal sites in Northwest Forest Plan area. High proportion of sites and high likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence
<i>Pedicularis howellii</i>	1, 2, PG	Off	103	2	Not closely associated with late-successional or old-growth forest.	Not closely associated with late-successional or old-growth forest.
<i>Platanthera orbiculata</i> var. <i>orbiculata</i> (<i>Habenaria orbiculata</i>)	1, 2	C	63	24	Moderate number of total Federal sites (83) though only 24 are recent; small number of plants per site. Moderate/high likelihood of sites in reserve allocations. Does not occur on rare microsites. Pre-disturbance survey practical.	Moderate number of total Federal sites (83) though only 24 are recent; small number of plants per site. Moderate/high likelihood of sites in reserve allocations. Does not occur on rare microsites. Pre-disturbance survey practical.
<i>Scoliopus bigelovii</i>	1, 2	Off	15	3	Low number of recent Federal sites in Northwest Forest Plan area, but considered too common to survey for, so very under-reported. Not closely associated with late-successional or old-growth forest. Protected in Redwood National Park. Moderate proportion of sites and high likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence.	Low number of recent Federal sites in Northwest Forest Plan area, but considered too common to survey for, so very under-reported. Not closely associated with late-successional or old-growth forest. Protected in Redwood National Park. Moderate proportion of sites and high likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods). ¹					
TAXA GROUP <i>Species</i>	NFP Category	Alt. 1	Pre- FEMAT Sites ²	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
ARTHROPODS					
Canopy herbivores (south range)	4	F			FEMAT concerns remain. No new information to indicate change in approach would be appropriate.
Coarse wood chewers (south range)	4	F			FEMAT concerns remain. No new information to indicate change in approach would be appropriate.
Litter and soil dwelling species (south range)	4	F			FEMAT concerns remain. No new information to indicate change in approach would be appropriate.
Understory and forest gap herbivores (south range)	4	F			FEMAT concerns remain. No new information to indicate change in approach would be appropriate.

¹ For taxa indicated by two scientific names, the first name is the currently accepted name, based on recent revisions. The name in parentheses is that used in the Northwest Forest Plan (Table C-3).

² Pre-FEMAT site numbers represent sites located prior to 1993.

³ Pre-Disturbance Surveys are deemed practical for this species, but continuing these surveys is not necessary in order to meet management objectives (see Chapter 2 discussion).

⁴ Reported in Hildebrand, D., R. Mathiasen, and J. Beatty 1997. Mountain Hemlock Dwarf Mistletoe (*Arceuthobium tsugense* spp. *mertensianae*), 1995 General Regional Survey in Washington. USDA Forest Service, Region 6, Portland, Oregon.

⁵ Numbers derived from 1998 Vascular Plant Management Recommendations.

Appendix G

Biological Evaluation (Federal Endangered, Threatened, and Proposed Species — Forest Service Sensitive Species)

Appendix G

Biological Evaluation (Federal Endangered, Threatened, and Proposed Species — Forest Service Sensitive Species) For the Supplemental Environmental Impact Statement For Amendment to the Survey and Manage, Protection Buffer, and Other Mitigation Measures Standards and Guidelines

Introduction

This Final Supplemental Environmental Impact Statement (SEIS) assesses three action alternatives for amending species-specific management direction for some relatively rare and/or localized species on National Forests and Bureau of Land Management (BLM) Districts in western Washington, western Oregon, and northern California. This management direction is contained in the Record of Decision for the Northwest Forest Plan (USDA, USDI 1994b), which amended the land and resource management plans for National Forests and BLM Districts within the range of the northern spotted owl. The underlying needs and the purpose for developing this SEIS are described in Chapter 1 of the Final SEIS.

This Biological Evaluation addresses effects on (1) species listed or proposed for listing under the federal Endangered Species Act (ESA) as endangered or threatened species; (2) habitat designated or proposed for designation under ESA as critical habitat; and, (3) species listed as sensitive by the Regional Foresters in Forest Service Regions 5 and 6.

The Final SEIS assesses four alternatives: No-Action and three action alternatives (Alternative 1 is the preferred alternative). The No-Action Alternative would continue the current direction as provided in the Northwest Forest Plan Record of Decision (USDA, USDI 1994b) for the Survey and Manage and other mitigation measures described in the Introduction section of this Final SEIS. The current Survey and Manage direction applies one or more of four possible categories to each of approximately 400 species or species groups. The four Survey and Manage categories are: manage known sites, survey prior to ground-disturbing activities, extensive surveys, and general regional surveys.

Because the purpose of the proposed action centers around clarifying existing direction rather than re-analyzing the entire Northwest Forest Plan, there are many similarities between the effects of the No-Action and action alternatives on endangered, threatened, proposed, and sensitive species, and designated and proposed critical habitat. Compared to the No-Action Alternative, the action alternatives would continue to:

- Apply the Survey and Manage mitigation measure for endemic and little-known species for which the reserves and other elements of the Northwest Forest Plan do not appear to provide a reasonable assurance of persistence.
- Apply the Survey and Manage elements of: manage known sites, and conducting pre-disturbance and landscape-scale surveys.
- Specify changing species between categories or removing them from Survey and Manage based on new information and review by the Regional Interagency Executive Committee.

- Apply the objectives and principle management direction (although not necessarily specific buffers) for Protection Buffer species.

The action alternatives combine and clarify the Survey and Manage, Protection Buffer, and certain other species-specific standards and guidelines in the Northwest Forest Plan. The alternatives apply to lands administered by the Forest Service and the BLM within the Northwest Forest Plan area. Any of the action alternatives, if selected, would amend those standards and guidelines in the Northwest Forest Plan that address Survey and Manage, Protection Buffers, Protection for Bats, Management of Recreation Sites to Minimize Disturbance to Species, and Protect Sites From Grazing. No other changes to the Northwest Forest Plan are being considered in the Final SEIS; there are no changes to major land allocations other than minor acreage of Late-Successional Reserves and Managed Late-Successional Areas created by Protection Buffers, nor are there any changes to other management direction.

Description of Alternatives

The following description of the alternatives being considered summarizes the detailed standards and guidelines provided in the Final SEIS, to which this Biological Evaluation is an appendix. While this summary is intended to provide sufficient detail for the reader to understand the impacts described later in this document, the reader is referred to Chapter 2 of the Final SEIS for a complete description of the standards and guidelines being evaluated. Where apparent discrepancies occur between the description of the alternatives as presented here and in Chapter 2, the text of the Final SEIS takes precedence.

The No-Action Alternative would result in no change in survey schedules or species management for Survey and Manage and Protection Buffer species from that identified in and analyzed as part of the Final SEIS for the Northwest Forest Plan (except for five minor changes described under Changing Standards and Guidelines - Adaptive Management section in Chapter 2 of this FSEIS. Consequently, there would be *no effect* to listed or proposed species or designated or proposed critical habitats resulting from a decision to select this alternative. There would also be *no impact* on Forest Service Sensitive Species.

Alternative 1 is designed to provide the level of protection originally intended in the Northwest Forest Plan (the current No-Action Alternative), but redefines Survey and Manage into six categories based on relative rarity, survey practicability, and understanding of ecological needs, rather than using the four existing categories defined by the protection or survey activity needed. All action alternatives also merge the current Protection Buffer and Protect From Grazing species into Survey and Manage. Some species change management categories based on new information or reanalysis by teams of specialists in the various taxa groups. Alternative 1 maintains all other elements of the Northwest Forest Plan, including other Appendix J2 (an appendix to the Northwest Forest Plan (USDA, USDI 1994a)) mitigations such as Riparian Reserve Scenario 1, additional coarse woody debris, 100-acre owl activity centers, etc.

Specifically, under Alternative 1, Survey and Manage is divided into six categories. Category 1A species are rare (57 species), pre-disturbance surveys are practical, and all known sites are managed. Category 1B species are rare (222 species), pre-disturbance surveys are not practical, and all known sites are managed. Category 1C species are uncommon (10 species), pre-disturbance surveys are practical, and high-priority sites are managed. Category 1D species are uncommon (14 species), pre-disturbance surveys are not practical or not necessary, and high-priority sites are managed. Category 1E species are rare (22 species), their status is undetermined, and all known sites are managed. Category 1F species are uncommon (21 species) and their status is undetermined. For Categories 1A and 1C (60 species) pre-disturbance surveys would be conducted prior to habitat-disturbing activities and strategic surveys (not associated with particular projects) would be conducted to provide information on specific habitat and population needs. For Categories 1B, 1D, 1E, and 1F (279 species), similar strategic surveys would be conducted. For 325 species in Categories A through E, known and new sites would be managed for the persistence of the species consistent with Management Recommendations.

Protection Buffer and Protect From Grazing species would be combined into Survey and Manage. Seventy-two species would be removed from Survey and Manage either throughout their range (63 species), or in part of their ranges (9 species) because they do not meet the basic criteria for inclusion.

This alternative eliminates Protection Buffer land allocations. Small Protection Buffer sites now allocated to Managed Late-Successional Areas and Late Successional Reserves would revert to the underlying land allocations. Occupied sites (such as managed late-successional areas for Del Norte salamanders) would be managed as known sites where they occur in accordance with Management Recommendations for the species, rather than be placed into the specific land allocation. Sites affected by this change are small, typically less than 10 acres.

Alternative 2 provides management under Survey and Manage Standards and Guidelines similar to that described under Alternative 1 for species determined to be rare (300 species, those in Categories A, B, and E in Alternative 1). For the 45 remaining species determined to be uncommon, only sites known as of September 30, 1999, would be managed. Strategic surveys would be completed for those 45 species within 5 years, at which time these species will be removed from Survey and Manage mitigation measures and considered for addition to the Forest Service Sensitive Species and BLM Special Status Species lists. As in Alternative 1, the same 72 species would be removed from Survey and Manage entirely or from part of their range. Alternative 2 would also combine the current Protection Buffer and Protect From Grazing species into Survey and Manage Standards and Guidelines and eliminate the Protection Buffer land allocations.

Alternative 2 differs from Alternative 1 by eliminating the surveys prior to habitat-disturbing activities requirement for 11 uncommon species, limiting management of known sites for 24 uncommon species to 1999 levels, adding management of pre-1999 sites for 21 species, and requiring strategic surveys for the 45 uncommon species be done within 5 years, and raising the standard for adding species to Survey and Manage to the level of rare rather than uncommon. Protection for non-vertebrate uncommon species is expected to decrease slightly, compared to Alternative 1.

Alternative 3 provides management under Survey and Manage Standards and Guidelines similar to that described in Alternative 1, but combines the six categories into three: one rare category (3A, 300 species, composed of Categories 1A, 1B, and 1E) and two uncommon categories (3B, 24 species, composed of Categories 1C and 1D and 3C, 22 species, composed of Category 1F).

Pre-disturbance or equivalent-effort pre-disturbance surveys will be conducted prior to habitat-disturbing activities for rare and uncommon species in Categories 3A and 3B. Surveys are designed to minimize the inadvertent loss of previously unknown sites. Surveys are not intended to guarantee absence in the project area, but rather they are intended to locate the species if it occurs in an identifiable condition during a reasonable survey time period (i.e., no more than two seasons.)

Strategic surveys will be conducted for all species, with a focus on habitat in all land allocations (including reserve land allocations (widely distributed species)), highest likelihood habitat (endemic species), or determination of true status of species (status undetermined species). Surveys are designed to locate the most important habitat for the species and to determine the ability of reserve lands to provide for species persistence.

Manage known sites for all species. For rare species, manage all known sites and protect all late-successional/old-growth habitat within 250 meters of the known site. For uncommon species with status undetermined, manage all known sites. For all other uncommon species, manage high-priority sites. As with Alternatives 1 and 2, Management Recommendations identify management of the site and identify if certain sites are no longer needed.

As in Alternative 1, the same 72 species would be removed from Survey and Manage in all or part of their ranges. Alternative 3 would also combine the current Protection Buffer and Protect From Grazing species into Survey and Manage Standards and Guidelines and eliminate most Protection Buffer land allocations.

Alternative 3 differs from Alternative 1 by requiring equivalent-effort surveys prior to habitat-disturbing activities for many species, including those whose fruiting cycles or other characteristics make finding it not practical. This type of survey is added for 236 species, as well as for 22 rare species with status undetermined. Strategic surveys are specified for all species. Protection for most species is expected to be higher than Alternative 1.

Determinations

The purpose of this analysis is to make a determination of the likely effects of a decision to continue to implement the No-Action Alternative, or modify existing management through adoption of one of the action alternatives, to Forest Service Sensitive Species, and to species listed under ESA as endangered, threatened, or proposed and their designated or proposed critical habitat. This determination of effects results from an analysis of the changes to the species' baselines that are likely to occur as a result of implementing one of these alternatives. Changes to the baseline are measured against the baseline that was assumed to occur prior to the implementation of this action. For this Final SEIS, the baseline subject to change by the action alternatives being considered here is that established at the time of the Northwest Forest Plan and associated Final SEIS analysis, as modified by subsequent analyses related to the Northwest Forest Plan. The No-Action Alternative would result in no changes to the environmental baseline.

The removal of 72 species from the Survey and Manage species list in all or part of the species' range under all action alternatives would result in approximately 24,800 acres of forested habitat in Matrix and Adaptive Management Area land allocations being removed from manage known site direction, unless occupied by other Survey and Manage species with manage known site direction, or protected by other standards and guidelines. If all 24,800 acres are removed from manage known site direction, this would represent about one-tenth of one percent of the federally-managed forest habitat in the range of the northern spotted owl.

It should be understood that these 24,800 acres could not be precisely identified, either in terms of actual number of acres or by specific location, at the time that the Northwest Forest Plan was developed. At that time, Survey and Manage species were assumed to be quite rare and few sites were known for nearly all of these species. Consequently, the analysis in the Northwest Forest Plan could not and did not account for any precise number or location of acres associated with known sites of Survey and Manage species. Therefore, the 1994 analysis could not identify any specific contribution of Survey and Manage known sites to Sensitive Species or species listed or proposed under ESA, and assumed no contribution to the environmental baseline for these species. The removal of 72 species from Survey and Manage in all or part of their range, and the associated removal of 24,800 acres from manage known site direction, therefore, would not alter the environmental baseline described for these species in the previous analysis and would not be identified here as an impact to these species that was not previously identified. Similarly, no specific contribution to the environmental baseline from the location of future sites of Survey and Manage species is possible at this time because future site locations cannot be precisely predicted.

In contrast to the 24,800 acres that would be removed from manage known site direction due to the removal of these 72 species, approximately 200,000 acres of Matrix, some of it currently in late-successional forest condition, has received additional protection as Riparian Reserves, based on additional information and site-specific analysis during the past 6 years of Northwest Forest Plan implementation.

Impacts on Forest Service Sensitive Species

The Forest Service Sensitive Species program includes species for which there is a documented concern for viability within one or more administrative units within the species' historic range (FSM 2670.22, WO Amendment 2600-95-7). The designation of "sensitive" by the Forest Service carries a requirement to analyze the impacts of projects and often to conduct surveys (Forest Service Manual 2670). Forest Service Sensitive Species in the range of the Northwest Forest Plan are listed in Table G-1. Over 450 species are listed as sensitive by Regions 5 and 6, in the range of the Northwest Forest Plan, including over 350 plant species. Many of these species are associated with late-successional habitat.

Several vascular plants and amphibians listed as sensitive by the Forest Service are also listed as Survey and Manage Species. Vascular plants with dual listing are: *Bensoniella oregana* (CA only), *Botrychium minganense*, *Clintonia andrewsiana*, *Coptis asplenifolia*, *Coptis trifolia*, *Corydalis aquae-gelidae*, *Cypripedium fasciculatum*, *Cypripedium montanum*, *Galium kamschaticum*, and *Pedicularis howellii*. Amphibians with dual listing are: Del Norte salamander, Larch Mountain salamander, Siskiyou Mountains salamander, and great gray owl (CA only). These species will remain on the Sensitive species list, regardless of their status under the No-Action Alternative or any of the action alternatives. None of the mollusks, fungi, lichens or bryophytes on the list of Survey and Manage species currently occurs on either the Region 5 or 6 Sensitive Species lists.

Under the three action alternatives, four Sensitive Species would be removed from Survey and Manage and related standards and guidelines, including *Botrychium minganense*, *Clintonia andrewsiana*, *Galium kamschaticum* and *Pedicularis howellii*. Other species that would be removed from Survey and Manage only because they are not closely associated with late-successional or old-growth forests are either already on, or are currently being considered for, the Forest Service Sensitive Species program. Known sites for these species will be managed until their disposition is clarified in the sensitive species program or other management process. In some cases, pre-project surveys would no longer be required. Therefore, some additional impacts to suitable habitat for sensitive species could occur. A forgone Survey and Manage survey, if it had been conducted, could have resulted in the subsequent protection of sites for sensitive species. However, the Forest Service conducts surveys for many sensitive species in the areas where actions/projects are proposed to occur. Where surveys are done, they have a reasonable probability of locating individuals and populations of these sensitive species, irrespective of whether surveys are conducted for Protection Buffer and Survey and Manage species. Discovery of sensitive species through their own surveys (and subsequent habitat management, including site protection) abates effects that might result from any changes in status of species included in the Protection Buffer or Survey and Manage mitigation measures.

Based on the above information, including the discussion of changes to the environmental baseline from removal of 72 species from Survey and Manage, the impacts of any of the action alternatives on sensitive species associated with late-successional forest habitat will be trivial. This conclusion is based substantially on the fact that none of these alternatives would markedly alter the environmental baseline previously analyzed as part of the Northwest Forest Plan and subsequent analyses. Implementation of any of the action alternatives will not impact the viability of any sensitive species. Therefore, for Forest Service Sensitive Species, in general, the determination for all three action alternatives is *no impact*.

Effects on Threatened, Endangered, and Proposed Species and Designated and Proposed Critical Habitat.

A biological assessment was prepared for the 1994 Final SEIS and Record of Decision that implemented Alternative 9 (the Northwest Forest Plan). Effects on listed and proposed species and designated and proposed critical habitat were described in that document (the Biological Assessment is an appendix to the 1994 FSEIS). As species were subsequently listed, Section 7 consultations were completed for the land and resource management plans (as amended by the

Northwest Forest Plan) that guide management on National Forests and BLM Districts. Survey and Manage strategies were considered a part of the standards and guidelines of the Northwest Forest Plan. The effects of each of the alternatives for implementing Survey and Manage strategies are described below.

The Biological Opinion prepared for the Northwest Forest Plan ROD assumed that all the features and standards and guidelines of the Northwest Forest Plan would be implemented. The Survey and Manage Standards and Guidelines were such features (ROD, pp. C-4 to C-6); 405 individual species and four species groups were categorized into one or more of four strategies (components) (ROD, Table 3-C). Given that this SEIS updates and modifies the list of Survey and Manage species (and Protection Buffer and Protect From Grazing species), and that some species will move to new strategies or be removed from Survey and Manage, it is necessary to examine the magnitude of these changes and their effects to listed and proposed species and designated critical habitat. The following discussion summarizes the effects of the Survey and Manage, Protection Buffer, and Protect From Grazing changes on listed and proposed species and designated or proposed critical habitat. Species have been grouped where effects and rationales are the same. Table G-2 is a current list of all Federally endangered, threatened, or proposed species, and designated and proposed critical habitat on National Forest and BLM administered lands in the Northwest Forest Plan area. The lists of species were provided by the various field offices of the U.S. Fish and Wildlife Service and National Marine Fisheries Service which have jurisdiction over the Northwest Forest Plan area. Web sites maintained by these agencies were checked to track up-to-the-present changes to lists of Proposed, Threatened, and Endangered species, and Proposed and Designated Critical Habitat.

Species Not Associated with Late-successional Forest on Federal Lands – No Effect

The Protection Buffer and Survey and Manage Standards and Guidelines were developed to address persistence concerns for species associated with late-successional forest. Sixty-eight listed or proposed species (identified below) occur within the Northwest Forest Plan area, but are (1) not known to occur on federal lands in the planning area; (2) their presence in the Northwest Forest Plan area is peripheral, transitory, or unaffected by forest management; or, (3) they do not inhabit coniferous forest and are not associated with late-successional and old-growth forests. Any habitat protected by the Protection Buffer and Survey and Manage Standards and Guidelines is likely to be late-successional conifer forest. Therefore, any changes to the Protection Buffer and Survey and Manage Standards and Guidelines would have no bearing on these species (or their critical habitat, if designated or proposed) and would not affect the conclusions of the Northwest Forest Plan Final SEIS. For these 68 listed or proposed species, the determination is *no effect*.

Vascular Plants

<i>Alopecurus aequalis</i> var. <i>sonomensis</i>	Sonoma alopecurus
<i>Arabis macdonaldiana</i>	MacDonald's rockcress
<i>Arenaria paludicola</i>	Marsh sandwort
<i>Astragalus applegatei</i>	Applegate's milkvetch
<i>Astragalus clarianus</i>	Clara Hunt's milkvetch
<i>Castilleja affinis</i> ssp. <i>neglecta</i>	Tiburon paintbrush
<i>Castilleja levisecta</i>	Golden Indian paintbrush
<i>Chorizanthe howellii</i>	Howell's spineflower
<i>Chorizanthe valida</i>	Sonoma spineflower
<i>Delphinium bakeri</i>	Baker's larkspur
<i>Delphinium luteum</i>	Yellow larkspur
<i>Erigeron decumbens</i> var. <i>decumbens</i>	Willamette daisy
<i>Erysimum menziesii</i>	Menzies' wallflower
<i>Hackelia venusta</i>	Showy stickweed
<i>Hesperolinon congestum</i>	Marin dwarf-flax
<i>Fritillaria gentneri</i>	Gentner's mission-bells
<i>Hesperolinon congestum</i>	Marin dwarf-flax
<i>Howellia aquatilis</i>	Water howellia

<i>Layia carnosa</i>	Beach layia
<i>Lasthenia burkei</i>	Burke's goldfields
<i>Lasthenia cojugens</i>	Contra costa goldfields
<i>Lilium occidentale</i>	Western lily
<i>Limnanthes floccosa</i> ssp. <i>grandiflora</i>	Large-flowered wooly meadowfoam
<i>Lomatium bradshawii</i>	Bradshaw's lomatium
<i>Lomatium cookii</i>	Cook's lomatium
<i>Lupinus sulphureus</i> var. <i>kincaidii</i>	Kincaid's lupine
<i>Lupinus tidestromii</i> var. <i>layneae</i>	Pt. Reyes clover lupine
<i>Lupinus tidestromii</i> var. <i>tidestromii</i>	Tidestrom's clover lupine
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	Many-flowered navarretia
<i>Orcuttia tenuis</i>	Slender Orcutt grass
<i>Phlox hirsuta</i>	Yreka phlox
<i>Plagiobothrys hirtus</i>	Hairy (Rough) popcorn flower
<i>Plagiobothrys strictus</i>	Calistoga allocarya
<i>Poa napensis</i>	Napa bluegrass
<i>Sidalcea nelsoniana</i>	Nelson's checkermallow
<i>Sidalcea oregana</i> var. <i>calva</i>	Wenatchee Mountain checkermallow
<i>Sidalcea oregana</i> var. <i>valida</i>	Kenwood Marsh checkermallow
<i>Spiranthes diluvialis</i>	Ladies'-tresses
<i>Thlaspi montanum</i> var. <i>californicum</i>	Kneeland Prairie penny-cress
<i>Trifolium amoenum</i>	Showy Indian clover

Invertebrates

<i>Branchinecta conservatio</i>	Conservancy fairy shrimp
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle
<i>Icaricia icarioides missionensis</i>	Mission blue butterfly
<i>Icaricia icarioides fenderi</i>	Fender's blue butterfly
<i>Incisalia mossii bayensis</i>	San Bruno elfin butterfly
<i>Lepidurus packardi</i>	Vernal pool tadpole shrimp
<i>Lycaeides argyrognomon lotis</i>	Lotis blue butterfly
<i>Pacifastacus fortis</i>	Shasta (= placid) crayfish
<i>Speyeria callippe callippe</i>	Callippe silverspot butterfly
<i>Speyeria zerene behrensii</i>	Behren's silverspot butterfly
<i>Speyeria zerene hippolyta</i>	Oregon silverspot butterfly
<i>Speyeria zerene myrtleae</i>	Myrtle's silverspot butterfly
<i>Syncaris pacifica</i>	California freshwater shrimp

Fish

<i>Eucyclogobius newberryi</i>	Tidewater goby
<i>Hypomesus transpacificus</i>	Delta smelt

Reptiles

<i>Dermochelys coriacea</i>	Leatherback turtle
<i>Chelonia mydas</i> (incl. <i>agassizii</i>)	Green turtle
<i>Lepidochelys olivacea</i>	Olive (=Pacific) ridley sea turtle
<i>Caretta caretta</i>	Loggerhead turtle

Birds

<i>Branta canadensis leucopareia</i>	Aleutian Canada goose
<i>Charadrius alexandrinus nivosus</i>	Western snowy plover (coastal populations)
<i>Pelcanus occidentalis</i>	Brown pelican
<i>Rallus longirostris obsoletus</i>	California clapper rail

Mammals

<i>Aplodontia rufa nigra</i>	Point Arena mountain beaver
<i>Eumetopias jubatus</i>	Steller (= northern) sea lion
<i>Odocoileus virginianus leucurus</i>	Columbian white-tailed deer
<i>Reithrodontomys raviventris</i>	Salt marsh harvest mouse

Listed and Proposed Plants – No Effect

The Action Agencies survey for listed and proposed plant species in the vicinity of proposed actions/projects (see Table G-2 for species list). These surveys are designed to have a high likelihood of locating populations of such plants irrespective of whether surveys are also done for Protection Buffer and Survey and Manage species. Discovery and subsequent protection of populations of listed or proposed plant species through their own surveys minimizes effects that might result from any changes in status of Protection Buffer and Survey and Manage species. Removal of 72 species from Survey and Manage will not change the environmental baseline for these species or result in changes to impacts to these species that were not anticipated in the analysis of the Northwest Forest Plan and subsequent analyses. For the three action alternatives, the determination is *no effect* for listed and proposed plants.

Listed and Proposed Fish – No Effect

All actions/projects proposed on BLM or FS administered lands must meet the Aquatic Conservation Strategy objectives of the Northwest Forest Plan. As proposed actions/projects are designed and analyzed for effects to listed fish, needs of the fish species and habitat elements required to meet Aquatic Conservation Strategy objectives will be identified. The changes in the Protection Buffer and Survey and Manage strategies will not alter this assessment process; therefore, there will be no effect as a result of changes in these strategies from the No-Action Alternative. Critical habitat for listed fish also corresponds well with Riparian Reserves in the Northwest Forest Plan and the Aquatic Conservation Strategy objectives. Therefore, any effects on listed or proposed fish that might result from any changes in status of Protection Buffer and Survey and Manage species will be minimal. Removal of 72 species from Survey and Manage will not change the environmental baseline for these species or result in changes to impacts to these species that were not anticipated in the analysis of the Northwest Forest Plan and subsequent analyses. For the three action alternatives, the determination is *no effect* for listed and proposed fish, and designated and proposed critical habitat.

California Red-legged frog – May Affect, Not Likely to Adversely Affect

Background and Affected Environment. The changes in the Protection Buffer and Survey and Manage strategies “may affect” the riparian-associated habitat of the California red-legged frog (although the most important habitat for red-legged frog is aquatic and riparian, this species is known to sometimes move through moist forest habitat during dispersal). Within the Northwest Forest Plan area, the potential range of the red-legged frog is confined to the “overlap” area between the Sacramento River basin and portions of the Mendocino and Shasta-Trinity National Forests, and a small portion of lower Middle Creek in Lake County, subject to heavy use by off-highway vehicle traffic. However, due to the poor potential quality of the habitat (lack of narrow, incised channels and pools; predominant riffles/runs) and elevation bands that the species is most likely to occur in, the alternatives being considered here should have little or no potential to affect the species (Bratch 2000, pers. comm.). Site records and suitable habitat for California red-legged frogs are extremely rare for this area.

A Draft Recovery Plan for the California red-legged frog was made available to the public in May 2000 (FR Vol. 65, No. 93, 30604-30605). A number of “Core Areas” are identified where suitable habitat is proposed to be protected and/or managed for California red-legged frogs for recovery. Portions of two Core Areas occur in the Northwest Forest Plan area. Core Area 13 (Cottonwood Creek) is located partly on the Shasta-Trinity National Forest and partly on the Mendocino National Forest, in the southwest corner of Shasta County and northwest corner of Tehama

County; federal land allocations in the proposed Core Area are Congressionally Reserved, Late-Successional Reserve, Adaptive Management Area, and Matrix. Core Area 14 (Clear Lake Tributaries) is partly on the Mendocino National Forest, in central Lake County; the portion of the proposed Core Area on National Forest System land is within both Late-Successional Reserve and Matrix land allocations.

Critical habitat for the California red-legged frog was proposed by the U.S. Fish and Wildlife Service on September 11, 2000 (USDI FWS 2000). Critical habitat areas are defined as those physical or biological features essential to the conservation of the species and which may require special management consideration or protection. The primary constituent elements of critical habitat for California red-legged frogs are: (1) suitable aquatic habitat; (2) associated uplands; and (3) suitable dispersal habitat connecting suitable aquatic habitat. Of 31 proposed critical habitat units for the California red-legged frog (encompassing 1.83 million acres of federal land), only Unit 6 (western half) is located on federally managed land within the Northwest Forest Plan area (Unit 6 partially overlaps with Core Area 13 in the Recovery Plan). Unit 6 consists of drainages found within the headwaters of Cottonwood and Red Bank Creeks in Tehama County. The unit encompasses approximately 119,600 acres (48,400 hectares); approximately 51 percent is within the boundaries of the Mendocino National Forest and the majority of the remaining 49 percent is privately owned. Land allocations on the federal portion of Unit 6 include Congressionally Reserved, Late-Successional Reserve, and Matrix. Unit 6 also encompasses approximately 20 sections of BLM managed land. There is no known or suspected frog habitat on these BLM lands. These parcels are identified for exchange and have undergone section 7 ESA consultation. The Biological Opinion for the potential land exchange contained terms and conditions with regard to the frog, requiring BLM to verify in the field the absence of habitat prior to any land transfers. If habitat were found, surveys for the species would be required.

Environmental Consequences and Comparison of Alternatives. The four alternatives considered in this SEIS would have similar effects on the California red-legged frog. All actions/projects proposed on BLM or FS administered lands must meet the Aquatic Conservation Strategy objectives of the Northwest Forest Plan. Furthermore, if a project is proposed which is in potential habitat for California red-legged frog, surveys for this species are conducted. These surveys are designed and implemented to have minimal impacts on the target species or its proposed critical habitat. Because some surveys for Survey and Manage species could be conducted in or near riparian zones, there is a slight chance that the Survey and Manage surveys themselves could result in disturbance to California red-legged frog or its habitat. For instance, if surveys for Survey and Manage species occurred in a stream channel during the time of year when frog egg masses would be present, these surveys could be detrimental. However, because (1) Survey and Manage surveys do not generally occur in the stream channels, other than for aquatic mollusks; (2) there is low likelihood that these frogs are present on Forest Service and BLM administered land within the range of the northern spotted owl; and, (3) suitable frog habitat is generally lacking on these federally managed lands outside of Riparian Reserves, the potential for this kind of impact is minimal/unlikely. Therefore, for the three action alternatives, the determination is *may affect, not likely to adversely affect* for California red-legged frog and its proposed critical habitat.

Bald eagle – No Effect

Background and Affected Environment. Breeding and wintering populations of the bald eagle occur throughout the Northwest Forest Plan area and are addressed in the Pacific States Bald Eagle Recovery Plan (USDI FWS 1986) and the Oregon-Washington Bald Eagle Working Team Implementation Plan (Washington DFW 1990). Agencies survey extensively for bald eagles. Management of the bald eagle includes preparation of site-specific management plans and providing protection zones and management areas, as needed, for the species and its habitat. Management guidelines delineated in these plans address the potential loss of habitat from timber harvest activities, the distribution goals identified in the recovery plan, and to some extent, human disturbance. This species is not essentially dependent on late-successional habitat, but it is linked to large trees near riparian habitat for roosting and nesting. Riparian areas are protected in the

Northwest Forest Plan area. The bald eagle was proposed for delisting in July 1999 and a final decision and rule will be published by the U.S. Fish and Wildlife Service.

Environmental Consequences and Comparison of Alternatives. All four alternatives in this SEIS would have similar effects on bald eagle habitat management. The primary potential effect of Alternatives 1, 2, and 3 on bald eagles would result from 72 species being removed from Survey and Manage Standards and Guidelines. This difference between the action alternatives and the No-Action Alternative would be the loss of protection for approximately 24,800 acres of late-successional habitat across the Northwest Forest Plan area. However, removal of 72 species from Survey and Manage will not change the environmental baseline for this species or result in changes to impacts to this species that were not anticipated in the analysis of the Northwest Forest Plan and subsequent analyses. The current requirements to conduct specific surveys and develop site management plans for bald eagles greatly reduces any potential effect from changes in the Protection Buffer and Survey and Manage Standards and Guidelines. None of the alternatives in this SEIS will affect the original basis for the assessment of the effects to bald eagles and conclusions in the Northwest Forest Plan Final SEIS. Therefore, for the three action alternatives, the determination is *no effect* for bald eagle.

Marbled murrelet – No Effect

Background and Affected Environment. Management of the marbled murrelet and its habitat on federally managed lands was an important component in the design of the Northwest Forest Plan. Therefore, this species received extensive attention in the Northwest Forest Plan Final SEIS and its supporting documents. That Final SEIS (pp. 3&4-245 through 3&4-249 and Appendices G and J2) provides a detailed explanation of the basis for concluding that the Northwest Forest Plan would serve as the federal agency contribution to marbled murrelet recovery. Additional information was provided in the April 12, 1994, letter from the SEIS Team Leader to the U.S. Fish and Wildlife Service. Where it occurs, critical habitat for marbled murrelet on federal lands is located within the boundaries of Late-Successional Reserves.

The management strategy for marbled murrelets in the Northwest Forest Plan includes two primary components: (1) protection and development of marbled murrelet nesting habitat inside the large reserves near the coast; and, (2) retention of all current and future known marbled murrelet nest sites in all land allocations and protecting occupied habitat. Location of murrelet nest sites is ensured by requiring protocol surveys of potential habitat for marbled murrelet prior to management activities.

Management of the Congressionally Withdrawn Areas and Late-Successional Reserves has occurred as expected. The most common activity in the coastal areas is the silvicultural thinning of stands within Late-Successional Reserves to encourage late-successional forest development. After 6 years of implementing the Northwest Forest Plan, there have been fewer impacts to the late-successional forest in the Matrix and Adaptive Management Areas than was originally expected, due to lower than anticipated timber harvest and more Riparian Reserve acreage than originally modeled.

Because the pre-project survey requirements for potential marbled murrelet habitat minimize the inadvertent loss of occupied sites, there is no anticipated effect from the Survey and Manage and Protection Buffer Standards and Guidelines. There is no new information that would substantially alter the conclusions of the Northwest Forest Plan Final SEIS concerning marbled murrelets.

Environmental Consequences and Comparison of Alternatives. The four alternatives considered in this SEIS would have similar effects on marbled murrelet habitat management. The primary potential effect of Alternatives 1, 2, and 3 on marbled murrelets would result from dropping protection for 72 Survey and Manage species in all or parts of their ranges. This difference between the three action alternatives and the No-Action Alternative would be the loss of protection for approximately 24,800 acres of late-successional habitat across the Northwest Forest Plan area, much of which is outside the range of the marbled murrelet. However, the presence of other

Survey and Manage species at the same location could result in continued protection for some of these locations. Consequently, the removal of 72 species from Survey and Manage will not change the environmental baseline for these species or result in changes to impacts to these species that were not anticipated in the analysis of the Northwest Forest Plan and subsequent analyses. Despite eliminating protection for these or any other Survey and Manage sites in the future, the level of protection for habitat currently occupied by marbled murrelet would not be reduced, since marbled murrelet surveys and habitat protection measures would remain in place regardless of Survey and Manage species locations. All nest sites located would be protected under existing Northwest Forest Plan Standards and Guidelines for the murrelet. The determination for the three action alternatives is *no effect* for marbled murrelet and its critical habitat.

Northern spotted owl – No Effect

Background and Affected Environment. Management of northern spotted owls and their habitat on federally managed lands was an important consideration in the design of the Northwest Forest Plan. This species received extensive attention in the Northwest Forest Plan Final SEIS and its supporting documents. The Northwest Forest Plan Final SEIS (USDA, USDI 1994a, pp. 3&4-211 through 3&4-245 and Appendices G, J.1, and J.3) provides the basis for concluding that the Northwest Forest Plan would serve as the federal agency contribution to spotted owl recovery.

An April 12, 1994, letter from the Northwest Forest Plan SEIS Team Leader to the U.S. Fish and Wildlife Service specifically addressed the contribution to spotted owl habitat which would accrue from implementation of the Survey and Manage Standards and Guidelines. This discussion states that the expected small scale of late-successional forest areas that would be retained for the Survey and Manage Standards and Guidelines would have a negligible beneficial effect on the maintenance of spotted owl populations. This negligible effect results from the fact that the federal recovery strategy for spotted owl population is primarily designed to retain and manage large blocks of late-successional habitat to provide for population clusters of spotted owl pairs (Biological Assessment of the Draft SEIS, October 1993). Most Survey and Manage sites are small in comparison.

An additional component of the Northwest Forest Plan spotted owl strategy was assurance of successful spotted owl dispersal among the large reserves, through their relatively close proximity. Based upon empirical movement data and population modeling, the distance between reserves is adequate to ensure dispersal between adjacent reserves. In addition, the retention and restoration of late-successional forest in Riparian Reserves and the 100-acre owl activity centers would contribute to spotted owl dispersal by providing foraging and roosting habitat for dispersing spotted owls.

The Northwest Forest Plan Final SEIS anticipated that some Matrix and Adaptive Management Area undergoing future timber harvest would be suitable spotted owl habitat and would be occupied by spotted owls (USDA, USDI 1994a, Appendix J3, p. J3-8). Therefore, the anticipated rate of timber harvest in the Matrix and Adaptive Management Areas was included as part of the analysis of effects to spotted owls in the Final SEIS. The Northwest Forest Plan Final SEIS analysis concluded that the expected timber harvest would be compatible with spotted owl habitat management objectives of the Northwest Forest Plan. The loss of spotted owl habitat in the Matrix and Adaptive Management Areas was anticipated to occur in a manner which would allow the habitat to regrow and spotted owl populations to stabilize in the Late-Successional Reserves and Congressionally Reserved Areas.

The management direction for spotted owl habitat contained in the Northwest Forest Plan is based on providing large blocks of late-successional forest in Congressionally Reserved Areas and Late-Successional Reserves, with provisions for spotted owl dispersal between the reserves. Management of the Congressionally Reserved Areas and Late-Successional Reserves has occurred consistent with what was anticipated in the Northwest Forest Plan Final SEIS. The most common activities inside Late-Successional Reserves are silvicultural thinning of non-late-successional

stands (with a general goal of developing late-successional forests), and risk management (fuels reduction) in the drier forest types. After 6 years of implementing the Northwest Forest Plan, there have been fewer impacts to the spotted owl population in Matrix and Adaptive Management Areas than were originally anticipated due to lower than anticipated timber harvest, and the designation of more Riparian Reserve acreage than originally modeled.

After 6 years, the scientific findings indicate that the original spotted owl management strategy is being met. A recent analysis of spotted owl demographics, prepared as part of the effectiveness monitoring of the Northwest Forest Plan, has provided updated information regarding the population status of the northern spotted owl (Franklin et al. 1999). This recent analysis is based on data compiled from study sites throughout the Northwest Forest Plan area. The 1999 results indicate a slightly slower decline in the spotted owl population and a stabilization of the female survival rates, when compared to a similar analysis from 1993 (Forsman et al. 1996). These conclusions are consistent with projections from the Northwest Forest Plan Final SEIS analysis.

Recently, a meta-analysis was conducted on all 16 spotted owl demographic study areas in Oregon, Washington, and northern California. Results of this analysis indicate that female survival rates and reproductive rates were not themselves declining over time (Franklin et al. 1999) as had been reported in earlier analyses. That is, recent evidence indicates that while spotted owl populations continue to decline consistent with what was anticipated in 1994, the rate of decline of spotted owls (based on female survival and reproductive rates) has slowed. This result is based on many different studies from throughout the range of the northern spotted owl. The estimated rate of decline in this 1998 meta-analysis of spotted owl data was 3.9 percent, with a 95 percent confidence interval of 0.925 - 0.997. This means that the population could be declining by as much as 7.5 percent per year, or by as little as 0.3 percent per year. Based on the fact that most demographic studies are not reporting large declines in owl numbers, we suspect that the actual rate of decline is closer to 0.3 percent per year than it is to 7.5 percent per year (Forsman 2000, pers. comm.).

Critical habitat for the northern spotted owl was designated on January 15, 1992 (57 FR 1796). Federal agencies have continued to manage the spotted owl critical habitat in compliance with the Endangered Species Act, consulting on activities that may affect critical habitat. The Final SEIS analysis assumed no contribution from spotted owl critical habitat above that already provided by the Northwest Forest Plan.

The Northwest Forest Plan Final SEIS anticipated publication of a special rule for spotted owls under section 4(d) of the Endangered Species Act (USDA, USDI 1994a, pp. 3&4-8 through 3&4-10). This rule has not been completed at this time. This rule would have released some nonfederal lands in portions of the spotted owl range in Washington from the prohibition against harming ("take" of) spotted owls. Many Habitat Conservation Plans (provided for under section 10(a)(1)(B) of the Act) have been completed. These plans result in permits for the incidental take of spotted owls for nonfederal activities when conducted in compliance with those plans. All Habitat Conservation Plans having undergone consultation relative to spotted owls under Section 7 of the Endangered Species Act were judged to not appreciably reduce the survival and recovery of the spotted owl in the wild. These plans have an affect similar to the proposed 4(d) rule by allowing some loss of spotted owls on nonfederal lands and their effect is consistent with the assumptions of the Northwest Forest Plan Final SEIS analysis.

Environmental Consequences and Comparison of Alternatives. The four alternatives considered in this SEIS would have similar effects on spotted owl habitat management across the Northwest Forest Plan area, which is the meaningful scale for consideration of spotted owl populations. Large reserves and other components of the Northwest Forest Plan would continue to provide habitat blocks for population clusters and dispersal conditions for individual spotted owls under all of the alternatives.

The primary effects of Alternatives 1, 2, and 3 on spotted owls would result from eliminating protection for 72 Survey and Manage species in all or part of their ranges. The primary difference

between the three action alternatives and the No-Action Alternative would be the loss of protection for approximately 24,800 acres of late-successional habitat across the Northwest Forest Plan area. However, this may be a slight overestimation of the number of acres undergoing a loss of protection, since the presence of other Survey and Manage species at the same location could result in continued protection for some of these locations.

The loss of 24,800 acres of late-successional forest would be minor, when compared to the acreage of current and potential late-successional forest in Riparian Reserves and the existing 100-acre owl core areas that might contribute to spotted owl movement across a landscape. Additionally, the 24,800 acres of habitat protected under the No-Action Alternative for Survey and Manage species, though meaningful for the individual Survey and Manage species, occurs as scattered, relatively small patches which provide little contribution to the maintenance of spotted owl populations, or other listed or proposed species. These small patches could often not be considered “suitable” habitat for spotted owls unless they happen to be contiguous with other reserved habitat as part of a block of habitat large enough to support spotted owl use. The analysis of spotted owl habitat and effects of the Northwest Forest Plan on that habitat, conducted under the Northwest Forest Plan Final SEIS, considered the potential contribution of small patches of late-successional forest identified for Survey and Manage and Protection Buffer species. At that time, the acreage of late-successional forest that would be included in managed known sites and protection buffers was assumed to be very low and their distribution across the landscape, and location relative to reserves or listed species sites, was unpredictable. For those reasons, that analysis concluded that these small areas of late-successional forest would not provide significant benefits to listed species. Consequently, the removal of 72 species from Survey and Manage will not change the environmental baseline for these species or result in changes to impacts to these species that were not anticipated in the analysis of the Northwest Forest Plan and subsequent analyses.

Although 72 species would be removed from Survey and Manage over all or part of their ranges under the three action alternatives, the patches of late-successional forest that would be returned to underlying land allocations and potentially available for timber harvest would not lower the amount of habitat or change the distribution of habitat originally expected to be available to spotted owls since the acres for all Survey and Manage known sites and Protection Buffers had not been anticipated to contribute significant benefits to owls in the analysis of the Northwest Forest Plan Final SEIS. While these areas might have benefitted dispersing spotted owls by providing additional structure and habitat complexity to the harvested area through the next stand rotation, these benefits are negligible when compared to the contribution of Riparian Reserves and Matrix Standards and Guidelines.

One difference between the alternatives is the effect on the red tree vole (*Arborimus longicaudus*). The red tree vole is a prey species of the northern spotted owl. The contribution of red tree voles as prey varies in different portions of the range of the spotted owl, from a low of one percent (of total prey items) of the diet to a high of six percent. However, in some circumstances, red tree voles may represent a higher proportion of the diet of individual spotted owls. In coastal southwestern Oregon, the red tree vole made up 50 percent of the prey items consumed by two owl pairs, though due to their small size, these voles provided only 16 percent of the total biomass of the diet (Forsman et al. 1984).

Alternative 2 would increase the risk that red tree vole populations may decline throughout portions of the species range and that the remaining populations could become more isolated (see also the red tree vole effects discussion in Chapter 3&4 of this FSEIS), compared to Alternatives 1 and 3 and the No-Action Alternative. This increased risk would result from management activities that occur primarily in the Matrix and Adaptive Management Areas. Any effects on spotted owls would be greatest for resident spotted owls, because they are dependent on prey availability within their individual home range. However, because red tree voles do not represent a large portion of the diet of most resident spotted owls and the Matrix and Adaptive Management Areas are not expected to provide long-term habitat for resident spotted owls, any effect to spotted owls from reductions of red tree vole populations is likely to be low.

The three action alternatives contain adaptive management components that result in some uncertainty as to their effects on other land management programs and environmental conditions. This uncertainty is due to the potential for changes in the Survey and Manage species and, therefore, changes in the number of acres affected as changes are made. The No-Action Alternative is somewhat static in the number of species it would retain, though it is possible that species could be removed. Even so, future surveys for the species covered under the No-Action Alternative would result in new locations and additional acres identified for the species management. Alternatives 1, 2, and 3 provide for both removals and additions to Survey and Manage, which exacerbates the uncertainty in the number of acres affected. With any of these action alternatives, the impacts of the changing list of species and the corresponding fluctuation in acreage protection for those species, along with the location of new species sites, adds uncertainty to the estimate of the future effects of the alternatives. Nevertheless, given the minimal amount of habitat for spotted owls provided by the Survey and Manage and Protection Buffer Standards and Guidelines, there is sufficient information on which to base reasonable analyses and conclusion.

Neither the No-Action Alternative nor any of the three action alternatives will affect the original basis for the assessment or the conclusions of the effects to spotted owls as presented in the Northwest Forest Plan Final SEIS. Congressionally Reserved Areas and Late-Successional Reserves will continue to be managed for late-successional habitat in the Northwest Forest Plan area and provide for spotted owl breeding clusters. Because Congressionally Reserved Areas, Late-Successional Reserves, and the Riparian Reserve system are intertwined or in close proximity, adequate dispersal habitat for spotted owls will continue to be provided. The potential difference between alternatives has no effect on the spotted owl habitat management strategy because it results in only negligible minor fluctuations in the amount of habitat. The Northwest Forest Plan Final SEIS assumptions and conclusions relative to a spotted owl 4(d) rule and critical habitat remain valid as described above. Therefore, none of the alternatives in this SEIS would affect the conclusions of the Northwest Forest Plan Final SEIS that spotted owls will be adequately provided for under the Northwest Forest Plan. Therefore, for the three action alternatives, the determination is *no effect* for northern spotted owl and its critical habitat.

Gray wolf – No Effect

Background and Affected Environment. The range of the gray wolf includes portions of the Northwest Forest Plan area, including the northern Cascade Range in Washington. Gray wolves are not closely associated with late-successional forest, but use a variety of open and forested habitat that supports the deer and elk populations which are their primary prey, as well as supporting areas with populations of small mammals. Gray wolves are sensitive to human disturbance.

Environmental Consequences and Comparison of Alternatives. All four alternatives in this SEIS would have similar effects on gray wolf habitat. Because gray wolves are not dependent on late-successional forest, the small, isolated patches of late-successional forest that would be protected under the Survey and Manage Standards and Guidelines would have a negligible effect on habitat for this species. None of the alternatives in this SEIS will affect the original basis for the assessment of the effects to gray wolves and conclusions in the Northwest Forest Plan Final SEIS. Therefore, for the three action alternatives, the determination is *no effect* for gray wolves.

Grizzly bear – No Effect

Background and Affected Environment. The range of the grizzly bear includes portions of the Northwest Forest Plan area, including the National Forests in the Cascade Range in Washington. While grizzly bears are not closely associated with late-successional forest, they use a variety of habitats, including forested areas for hiding and cover. Grizzly bears are sensitive to human disturbance.

Environmental Consequences and Comparison of Alternatives. All four alternatives in this SEIS would have similar effects on grizzly bear habitat. Because grizzly bears are not dependent on

late-successional forest, the small, isolated patches of late-successional forest that would be protected under the Survey and Manage Standards and Guidelines would have minimal effect on habitat for this species. None of the alternatives in this SEIS will affect the original basis for the assessment of the effects to grizzly bears and conclusions in the Northwest Forest Plan Final SEIS. Therefore, for the three action alternatives, the determination is *no effect* for grizzly bear.

Canada Lynx – May Affect, Not Likely to Adversely Affect

Background and Affected Environment. In general, lynx are associated with habitats that are southern extensions of the boreal forest. Lynx are highly specialized predators whose primary prey is the snowshoe hare (*Lepus americanus*). Lynx have evolved to survive in areas that receive deep snow. Snowshoe hares use forests with dense understories that provide forage, cover to escape from predators, and protection during extreme weather. Generally, earlier stages of successional forest have greater understory structure than do mature forests and support higher hare densities. However, mature forests can also provide snowshoe hare habitat, as openings appear in the canopy of mature forests when trees succumb to disease, fire, wind, ice, or insects, and the understory develops. Lynx concentrate their hunting activities in areas where hare activity is relatively high. Lynx are thought to use late-successional and old-growth forests for denning.

The Canada lynx is a Protection Buffer and C3 (component 3 — extensive surveys) species under the No-Action Alternative. The lynx management direction was changed from requiring pre-project surveys to an extensive survey approach on June 11, 1996. This approach more closely addresses the primary survey need for the lynx, to define its range in the Northwest Forest Plan area. The lynx was not addressed further in the Species Review Process for this Final SEIS because no substantial new information was available for the analysis.

The lynx was proposed for listing on July 8, 1998, as a threatened species under the Endangered Species Act (63 FR 36994). A final rule listing the species as threatened was published in the Federal Register on March 24, 2000, and became effective on April 24, 2000. The U.S. Fish and Wildlife Service concluded that the population in the conterminous United States was threatened by human alteration of forests, low numbers as a result of past overexploitation, expansion of the range of competitors, and elevated levels of human access into lynx habitat. To date, critical habitat for the species has not been designated or proposed.

Concurrent with the listing process, a national interagency Lynx Conservation Assessment and Strategy was developed to provide a consistent and effective approach to conservation of Canada lynx in the conterminous United States (USDI, USDA 2000). The Forest Service, BLM, U.S. Fish and Wildlife Service, and National Park Service are all participants. The Lynx Science Report (Ruggiero et al. 1999) provides background information on the species and its management.

The Lynx Conservation Assessment and Strategy identifies 17 risk factors in 4 different categories—factors affecting lynx productivity, lynx mortality, lynx movements, and other large-scale risk factors. Risk factors identify activities or existing conditions that could adversely affect either individuals or groups of lynx. Factors identified include: timber management; wildland fire management; recreation; forest/backcountry roads and trails; livestock grazing; other human developments; trapping; predator control; incidental or illegal shooting; competition and predation as influenced by human activities; highways (vehicular collisions); highway, railroad, and utility corridors; land ownership patterns; ski areas and large resorts; fragmentation and degradation of lynx refugia; lynx movement and dispersal across shrub-steppe habitats; and habitat degradation by non-native invasive plant species. Within the range of the Northwest Forest Plan, the primary risk factors for lynx are: forest type conversion and precommercial thinning in snowshoe hare habitat (primary lynx prey); fire exclusion that prevents natural disturbance processes; roads and winter recreational trails; and lack of a lynx monitoring strategy.

Conservation Agreements for Canada Lynx were recently established between the U.S. Fish and Wildlife Service and the Forest Service (USDA, USDI 2000) and the U.S. Fish and Wildlife Service and BLM (USDI FWS, BLM 2000). An earlier Conservation Agreement was signed by

the U.S. Fish and Wildlife Service and the Forest Service in February 1998, before the lynx was listed. On February 7, 2000, the Forest Service and the U.S. Fish and Wildlife Service entered into their conservation agreement, under which the agencies agreed to consider conservation measures in the Lynx Conservation Assessment and Strategy when designing and implementing activities that might affect lynx. This agreement applies to Forest Service managed lands in Regions 1, 2, 4, 6, and 9 of the Forest Service, and was signed in coordination with Regions 1, 3, 5, and 6 of the U.S. Fish and Wildlife Service. This agreement, therefore, applies to all National Forest lands that provide known or potential lynx habitat in the Northwest Forest Plan area, as described in the Lynx Conservation Assessment and Strategy.

Under this agreement, the Forest Service and U.S. Fish and Wildlife Service recognize the Lynx Conservation Assessment and Strategy (and the science report upon which it is based) as a compendium and interpretation of current scientific knowledge about the Canada lynx and agree to use the Lynx Conservation Assessment and Strategy in making determinations of effects for lynx, for actions potentially affecting lynx or lynx habitat in the planning area. The Forest Service and U.S. Fish and Wildlife Service also agree to review and consider the Lynx Conservation Assessment and Strategy in designing activities so as to avoid adverse impacts to the species.

Wildlife biologists in the Salem, Eugene, Coos Bay, Roseburg and Medford BLM Districts, and the Klamath Falls Resource Area of the Lakeview District, have reviewed the evaluations of Canada lynx habitat on BLM administered lands in western Oregon that they completed in late 1999 and early 2000. These previous evaluations had indicated the potential for the occurrence of secondary habitat on a small portion of the Salem District; all other Districts indicated that they had no lynx habitat.

The current review of these previous evaluations, done at the request of the Oregon State Office, was conducted using the Criteria and Procedures for Lynx Habitat Mapping and Recommendations for Oregon and Washington contained in the July 28, 2000, memorandum from the Lynx Biology Team to the Lynx Steering Committee. These mapping criteria and procedures were provided as direction to field units from the Lynx Steering Committee in their August 22, 2000, letter. Based on these criteria and procedures, the BLM concludes that no Canada lynx habitat occurs on BLM administered lands within these Districts/Resource Areas in western Oregon, and that actions administered by the BLM in western Oregon are not likely to impact lynx.

In 1994, the Northwest Forest Plan Final SEIS information on the distribution of lynx indicated the species occurred in the north-central portion of the Cascade Range in Washington State. As a result of the 1996 change in management direction, extensive surveys for lynx have been conducted to determine if the species occurs in areas in which they were not known at the time of the Northwest Forest Plan Final SEIS. The newly acquired information suggests that the range of the species in the Northwest Forest Plan area may extend to the remainder of the Washington Cascades and part of the Oregon Cascades, although these data and this extension of the range have not been confirmed. This unconfirmed survey information has not resulted in any changes in the documented range of the lynx.

Environmental Consequences and Comparison of Alternatives. The No-Action Alternative would retain the lynx Protection Buffer language on pages C-47 through C-48 of the Northwest Forest Plan Record of Decision (USDA, USDI 1994b), which applies special management in the Matrix and Adaptive Management Area land allocations, as modified in the June 11, 1996, management direction.

The Canada Lynx Standard and Guideline in this Final SEIS has been modified in the action alternatives to more closely align with the existing interagency Conservation Agreements and address legal requirements of ESA compliance. The Lynx Conservation Assessment and Strategy was recently developed to provide a consistent and effective approach to conservation of Canada lynx in the conterminous United States (USDI, USDA FS 2000). Subsequently, the U.S. Fish and Wildlife Service and the Forest Service (USDA, USDI 2000) and the U.S. Fish and Wildlife

Service and the BLM (USDI FWS, BLM 2000) signed conservation agreements, and the action agencies agreed to consider conservation measures in the Lynx Conservation Assessment and Strategy, when designing and implementing actions that could affect lynx or their habitat. The Canada Lynx Standard and Guideline would apply to all land allocations.

Since all three action alternatives propose to apply the same management direction (Canada Lynx Standard and Guideline), the environmental consequences of these alternatives would be similar. Under the action alternatives, the Forest Service would not propose or conduct any activity that would result in a “may affect, *likely to adversely affect*” determination for the lynx until land and resource management plans were reviewed or amended, as appropriate, to fully consider conservation measures from the Lynx Conservation Assessment and Strategy. This amendment process would include appropriate National Environmental Policy Act (NEPA) review and public involvement, and compliance with provisions of the Endangered Species Act. For activities proposed on Forest Service managed lands by and/or involving third parties, the Forest Service and U.S. Fish and Wildlife Service would review and consider the new information on lynx to ensure compliance with all applicable federal laws, including ESA, NEPA, National Forest Management Act, and Federal Land and Policy Management Act, during the agency analysis and decision-making process. This would include a consideration of cumulative effects and a determination that the action would not result in an irreversible and irretrievable commitment of resources that would foreclose reasonable and prudent alternatives under section 7(d) of ESA. For these reasons, the Canada Lynx Standard and Guideline, as proposed under the three action alternatives, is expected to result in a very low risk to persistence for lynx within the planning area.

Under the action alternatives, 72 species would be removed from Survey and Manage in all or part of their range in the Northwest Forest Plan area, resulting in approximately 24,800 acres of known sites being returned to the underlying land allocation. This is not expected to affect lynx. Removal of 72 species from Survey and Manage will not change the environmental baseline for this species or result in changes to impacts to this species that were not anticipated in the analysis of the Northwest Forest Plan and subsequent analyses. Future activities including, but not limited to, timber harvest, road construction, or application of prescribed fire, might be proposed on these “returned” sites, but would be evaluated for their direct and indirect effects to lynx. Because management direction provided through the Canada Lynx Standard and Guideline would require that activities conducted on these returned sites not adversely affect the species, future management would not result in adverse impacts to lynx.

Under the action alternatives, the Forest Service would not conduct activities likely to adversely affect the lynx. For BLM administered lands, the action alternatives are determined to have no effect on lynx or its habitat, based upon the conclusion that BLM administered lands contain no suitable habitat for the species in the planning area. For the proposed action, because of the provisions in the February 7, 2000, Forest Service Conservation Agreement, and the lack of suitable habitat for Canada lynx on BLM administered lands in the planning area, the determination for Canada lynx is *may affect, not likely to adversely affect*.

Designated or Proposed Critical Habitat – General

Regardless of where critical habitat is located, the effects of any action or project on designated or proposed critical habitat would be assessed on a site-specific basis, and relative to the applicable species, independent of Protection Buffer and Survey and Manage requirements. Identification of actions or projects deemed acceptable for maintenance of the integrity of critical habitat will be determined based on what is required for the critical habitat itself (analysis of primary constituent elements). Further, changes to the standards and guidelines being considered through this SEIS would not alter the conclusions reached in previous consultations regarding the effects of these standards and guidelines on the primary constituent elements of critical habitat for listed species. Because of these requirements and considerations, there would be an inconsequential risk to designated or proposed critical habitat from proposed changes to the Survey and Manage, Protection Buffer, and related mitigation measures.

Summary

The Northwest Forest Plan Final SEIS Biological Assessment of species listed under the Endangered Species Act assumed that the contribution to their survival from protection of Survey and Manage species would be minimal. This conclusion was based on the assumptions that (1) the amount of late-successional habitat that would be protected by Survey and Manage species known sites would be minimal compared to the 24 million acres of federal land included in the range of the northern spotted owl; (2) the fact that the actual locations of Survey and Manage species' protected sites were unpredictable at the time the Northwest Forest Plan consultation was conducted; and, (3) the fact that the protected sites are, mostly, in patches as small as 2 acres. The Biological Opinion completed under that consultation did not anticipate a specified amount of incidental take, but rather deferred the discussion of incidental take to consultation for specific and programmatic activities that would implement the Northwest Forest Plan.

The Northwest Forest Plan Final SEIS Biological Assessment stated that Survey and Manage mitigation measures were expected to retain acreage of late-successional forest throughout the range of the northern spotted owl; however, Survey and Manage sites were likely to occur in small patches and have a long-term effect similar to green-tree and old growth retention provisions. Green tree retention and retention of old growth in watersheds will provide some benefit to spotted owls in the long term. Over a period of 100 years or so, these provisions will provide additional structural diversity to forest stands, which would improve the stand's ability to serve as owl habitat, even after harvested" (USDA, USDI 1994a, Appendix G, p. G-37). In the Biological Opinion from the U.S. Fish and Wildlife Service (USDA, USDI 1994, Appendix G, Biological Opinion p. 12), Survey and Manage or Protection Buffer provisions are not specifically included in environmental baseline for any of the species addressed.

Under all action alternatives, approximately 24,800 acres of forested habitat in Matrix and Adaptive Management Area land allocations would be returned to the underlying land allocation unless occupied by other Survey and Manage species with manage known site protection, or protected by other standards and guidelines, due to the removal of 72 species from Survey and Manage in all or part of the species ranges. The 24,800 acres, as far as listed species are concerned, were never counted as protected habitat in the Biological Assessment for the Northwest Forest Plan (1994). Thus, any decision to "return" these acres to Matrix and Adaptive Management Area land allocations is not a "reinstatement" at all.

For the above-stated reasons, the analysis of effects for listed species from the Northwest Forest Plan Final SEIS concluded that no substantial contribution would accrue to listed species from the protection of known sites for Survey and Manage species. The removal of 72 species from all or part of their range and the return of 24,800 acres of late-successional habitat to the underlying land allocation should not be considered as a change in the environmental baseline for listed species. Hence, none of the action alternatives should result in changes to the status or the likely effects to listed species in the Northwest Forest Plan area.

Summary of Determinations

For all action alternatives, for all sensitive species in late-successional habitat (Forest Service designation), the collective determination is *may impact, but not likely to result in a trend toward federal listing*. For sensitive species not associated with late-successional habitat, the determination is *no impact*. For 68 species listed or proposed as Endangered or Threatened, and which are not dependent on late-successional habitat, the determination for all action alternatives is *no effect*. For California red-legged frog proposed critical habitat, the determination for all action alternatives is *may affect, not likely to adversely affect*. For all other species listed as Endangered or Threatened (including Proposed or Designated Critical Habitat), for all action alternatives, the determination is *no effect*.

Prepared by Forest Service biologist Lee O. Webb and reviewed by BLM biologists Bruce Rittenhouse, Barbara Hill, and Joseph Lint.

Signed:

/s/ Lee O. Webb

October 20, 2000

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Date

Literature Cited

- Bratch, P. 2000. Personal Communication. October 4, 2000. Letter to Mario Mamone and others providing technical assistance of potential effects to California red-legged frog.
- Forsman, E.D. 2000. Personal Communication. March 20, 2000. Electronic mail providing technical responses to public comments.
- Forsman, E.D., E.C. Meslow and H.M. Wight. 1984. Distribution and biology of the spotted owl in Oregon. Wildl. Monogr. 87. Washington, DC: The Wildlife Society. 64 p.
- Forsman, E. D., S. DeStefano, M. G. Raphael, and R. J. Gutierrez (eds). 1996. Demography of the northern spotted owl. Studies in Avian Biology No. 17.
- Franklin, A.B., K.P. Burnham, G.C. White [and others]. 1999. Range-wide status and trends in northern spotted owl populations. U.S. Geologic Survey - Biological Resources Division, Colorado Cooperative Fish and Wildlife Research Unit, Fort Collins, Colorado, and Oregon Cooperative Fish and Wildlife Research Unit, Corvallis, Oregon. 71 p.
- Ruggiero, Leonard F., Keith B. Aubry, Steven W. Buskirk, Gary M. Koehler, Charles J. Krebs, Kevin S. McKelvey, John R. Squires. 1999. Ecology and Conservation of Lynx in the United States. USDA Forest Service. Rocky Mountain Research Station General Technical Report 13MRS-GTR-30WWW. 480 p.
- USDA Forest Service and USDI Bureau of Land Management. 1994a. Final supplemental environmental impact statement on management of habitat for late-successional and old-growth forest related species within the range of the northern spotted owl (Northwest Forest Plan). Portland, Oregon: U.S. Department of Agriculture, Forest Service; U.S. Department of Interior, Bureau of Land Management. 2 vols. and appendices.
- USDA Forest Service and USDI Bureau of Land Management. 1994b. Record of Decision for amendments to Forest Service and Bureau of Land Management planning documents within the range of the northern spotted owl; standards and guidelines for management of habitat for late-successional and old-growth forest related species within the range of the northern spotted owl. Portland, Oregon: U.S. Department of Agriculture (Forest Service), U.S. Department of Interior (Bureau of Land Management).
- USDA Forest Service and USDI Fish and Wildlife Service. 2000. Canada Lynx Conservation Agreement. February 7, 2000, FS Agreement # 00-MU-11015600-013. 11 p.
- USDI Fish and Wildlife Service. 1986. Recovery plan for the Pacific bald eagle. U.S. Fish and Wildlife Service, Portland, OR. 160 p.
- USDI Fish and Wildlife Service. 2000. Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for the California Red-legged Frog (*Rana aurora draytonii*). Federal Register, September 11, 2000, Vol 65, No. 176, pp. 54,892-54,932.
- USDI Fish and Wildlife Service, Bureau of Land Management, National Park Service and USDA Forest Service. 2000. Canada Lynx Conservation Assessment and Strategy. Bill Ruediger, Team Leader. 137 p.
- USDI Fish and Wildlife Service and Bureau of Land Management. 2000. Canada Lynx Conservation Agreement. September 1, 2000. BLM Agreement # 6840 (230). 13 p.
- Washington Department of Fish and Wildlife. 1990. Working implementation plan for bald eagle recovery in Oregon and Washington. Bald Eagle Working Team for Oregon and Washington. Olympia, WA.

Table G-1. Sensitive species in Forest Service Regions 5 (CA) and 6 (OR/WA), within the Northwest Forest Plan area (Range of the Northern Spotted Owl).		
Scientific Name	Common Name	Region
VASCULAR PLANTS		
<i>Abronia umbellata</i> ssp. <i>breviflora</i>		6
<i>Agoseris elata</i>		6
<i>Agrostis howellii</i>		6
<i>Allium peninsulare</i>		6
<i>Androsace elongata</i> ssp. <i>acuta</i>		6
<i>Anemone muttalliana</i>		6
<i>Anemone oregana</i> var. <i>felix</i>		6
<i>Antennaria parvifolia</i>		6
<i>Antirrhinum subcordatum</i>		5
<i>Arabis macdonaldiana</i>		6
<i>Arabis modesta</i>		6
<i>Arabis sparsiflora</i> var. <i>atrorubens</i>		6
<i>Arabis suffrutescens</i> var. <i>horizontalis</i>		6
<i>Arctostaphylos hispidula</i>		6
<i>Arenaria paludicola</i>		6
<i>Arnica viscosa</i>		6
<i>Artemisia campestris</i> ssp. <i>borealis</i> var. <i>wormskioldii</i>		6
<i>Artemisia ludoviciana</i> ssp. <i>estesii</i>		6
<i>Asplenium septentrionale</i>		6
<i>Aster gormanii</i>		6
<i>Aster sibiricus</i> var. <i>meritus</i>		6
<i>Aster vialis</i>		6
<i>Astragalus agnicidus</i>		5
<i>Astragalus arrectus</i>		6
<i>Astragalus australis</i> var. <i>olympicus</i>		6
<i>Astragalus microcystis</i>		6
<i>Astragalus peckii</i>		6
<i>Astragalus tyghensis</i>		6
<i>Bensoniella oregana</i>		5/6
<i>Bolandra oregana</i>		6
<i>Botrychium ascendens</i>		6
<i>Botrychium campestre</i>		6

Table G-1. Sensitive species in Forest Service Regions 5 (CA) and 6 (OR/WA), within the Northwest Forest Plan area (Range of the Northern Spotted Owl).		
Scientific Name	Common Name	Region
VASCULAR PLANTS (continued)		
<i>Botrychium botrychium ascendens</i>		5
<i>Botrychium botrychium crenulatum</i>		5
<i>Botrychium botrychium lunaria</i>		5
<i>Botrychium botrychium montanum</i>		5
<i>Botrychium fenestratum</i>		6
<i>Botrychium lineare</i>		6
<i>Botrychium minganense</i>		6
<i>Botrychium montanum</i>		6
<i>Botrychium paradoxum</i>		6
<i>Botrychium pedunculosum</i>		6
<i>Botrychium pinnatum</i>		6
<i>Botrychium pumicola</i>		6
<i>Brodiaea coronaria</i> ssp. <i>rosea</i>		5
<i>Calamagrostis breweri</i>		6
<i>Calochortus greenii</i>		5
<i>Calochortus howellii</i>		6
<i>Calochortus longebarbatus</i> var. <i>longebarbatus</i>		5/6
<i>Calochortus longebarbatus</i> var. <i>peckii</i>		6
<i>Calochortus nitidus</i>		6
<i>Calochortus nutudus</i>		6
<i>Calochortus persistens</i>		5
<i>Calochortus umpquaensis</i>		6
<i>Camassia howellii</i>		6
<i>Camissonia graciliflora</i>		6
<i>Camissonia pygmaea</i>		6
<i>Campanula shetleri</i>		5
<i>Campanula wilkinsiana</i>		5
<i>Cardamine pattersonii</i>		6
<i>Carex anthoxanthea</i>		6
<i>Carex atrata</i> var. <i>atrosquama</i> (WA tracks as <i>C. atrosquama</i>)		6
<i>Carex atrata</i> var. <i>erecta</i> (<i>C. heteroneura</i>)		6

Table G-1. Sensitive species in Forest Service Regions 5 (CA) and 6 (OR/WA), within the Northwest Forest Plan area (Range of the Northern Spotted Owl).

Scientific Name	Common Name	Region
VASCULAR PLANTS (continued)		
<i>Carex backii</i>		6
<i>Carex chordorrhiza</i>		6
<i>Carex circinata</i>		6
<i>Carex comosa</i>		6
<i>Carex crawfordii</i>		6
<i>Carex densa</i>		6
<i>Carex dioica</i> var. <i>gynocrates</i> (WA tracks as <i>C. dioica</i>)		6
<i>Carex flava</i>		6
<i>Carex foenea</i>		6
<i>Carex hystericina</i>		6
<i>Carex interior</i>		6
<i>Carex livida</i>		6
<i>Carex macrochaeta</i>		6
<i>Carex nardina</i>		6
<i>Carex norvegica</i>		6
<i>Carex nova</i>		6
<i>Carex parryana</i>		6
<i>Carex pluriflora</i>		6
<i>Carex proposita</i>		6
<i>Carex rostrata</i>		6
<i>Carex saxatilis</i> var. <i>major</i>		6
<i>Carex scirpoidea</i> var. <i>scirpoidea</i>		6
<i>Carex scirpoidea</i> var. <i>stenochlaena</i>		6
<i>Carex serratodens</i>		6
<i>Carex stenophylla</i> (<i>C. eleocharis</i>)		6
<i>Carex stylosa</i>		6
<i>Carex sychnocephala</i>		6
<i>Carex tenuifolia</i>		6
<i>Carex vallicola</i>		6
<i>Carex xerantica</i>		6
<i>Cassiope lycopodioides</i>		6
<i>Castilleja chlorotica</i>		6

Table G-1. Sensitive species in Forest Service Regions 5 (CA) and 6 (OR/WA), within the Northwest Forest Plan area (Range of the Northern Spotted Owl).		
Scientific Name	Common Name	Region
VASCULAR PLANTS (continued)		
<i>Castilleja cryptantha</i>		6
<i>Castilleja fraterna</i>		6
<i>Castilleja thompsonii</i>		6
<i>Chaenactis suffrutescens</i>		5
<i>Chaenactis thompsonii</i>		6
<i>Cheilanthes intertexta</i>		6
<i>Chlorogalum angustifolium</i>		6
<i>Chrysolepis chrysophylla</i>		6
<i>Chrysosplenium tetrandrum</i>		6
<i>Cicuta bulbifera</i>		6
<i>Cimicifuga elata</i>		6
<i>Clarkia heterandra</i>		6
<i>Claytonia lanceolata</i> var. <i>pacifica</i>		6
<i>Clintonia andrewsiana</i>		6
<i>Collinsia sparsiflora</i> var. <i>bruceae</i>		6
<i>Collomia mazama</i>		6
<i>Coptis aspleniifolia</i>		6
<i>Coptis trifolia</i>		6
<i>Cordylanthus maritimus</i> ssp. <i>palustris</i>		6
<i>Cordylanthus tenuis</i> ssp. <i>pallescens</i>		5
<i>Corydalis aquae-gelidae</i>		6
<i>Cryptantha milobakeri</i>		6
<i>Cryptantha rostellata</i>		6
<i>Cryptogramma stelleri</i>		6
<i>Cupressus bakeri</i>		6
<i>Cyperus bipartitus</i>		6
<i>Cypripedium fasciculatum</i>		5/6
<i>Cypripedium montanum</i>		5
<i>Cypripedium parviflorum</i>		6
<i>Damasonium californicum</i>		6
<i>Delphinium nudicaule</i>		6
<i>Delphinium viridescens</i>		6
<i>Dicentra pauciflora</i>		6

Table G-1. Sensitive species in Forest Service Regions 5 (CA) and 6 (OR/WA), within the Northwest Forest Plan area (Range of the Northern Spotted Owl).

Scientific Name	Common Name	Region
VASCULAR PLANTS (continued)		
<i>Dodecatheon austrofrigidum</i>		6
<i>Draba aurea</i>		6
<i>Draba cana</i>		6
<i>Draba howellii</i>		6
<i>Draba longipes</i>		6
<i>Dryas drummondii</i>		6
<i>Dryopteris cristata</i>		6
<i>Epilobium nivium</i>		5
<i>Epilobium oregonum</i>		5/6
<i>Epilobium siskiyouense</i>		6
<i>Eriastrum brandegeae</i>		5
<i>Ericameria arborescens</i>		6
<i>Erigeron cervinus</i>		6
<i>Erigeron disparipilus</i>		6
<i>Erigeron oregonus</i>		6
<i>Erigeron peregrinus</i> ssp. <i>peregrinus</i> var. <i>thompsonii</i>		6
<i>Erigeron petrophilus</i>		6
<i>Erigeron salishii</i>		6
<i>Eriogonum alpinum</i>		5
<i>Eriogonum lobbii</i>		6
<i>Eriogonum nervulosum</i>		5
<i>Eriogonum pendulum</i>		5
<i>Eriogonum tripodium</i>		5
<i>Eriophorum chamissonis</i>		6
<i>Eriophorum viridicarinatum</i>		6
<i>Eritrichium nanum</i> var. <i>elongatum</i>		6
<i>Eryngium petiolatum</i>		6
<i>Erythronium citrinum</i> var. <i>roderickii</i>		5
<i>Erythronium elegans</i>		6
<i>Erythronium howellii</i>		6
<i>Eschscholzia caespitosa</i>		6
<i>Euonymus occidentalis</i>		6

Table G-1. Sensitive species in Forest Service Regions 5 (CA) and 6 (OR/WA), within the Northwest Forest Plan area (Range of the Northern Spotted Owl).		
Scientific Name	Common Name	Region
VASCULAR PLANTS (continued)		
<i>Festuca elmeri</i>		6
<i>Filipendula occidentalis</i>		6
<i>Frasera umpquaensis</i>		5/6
<i>Fritillaria camschatcensis</i>		6
<i>Fritillaria glauca</i>		6
<i>Fritillaria purdyi</i>		6
<i>Galium kamtschaticum</i>		6
<i>Gallium serpicum</i> var. <i>warnerense</i>		6
<i>Gentiana glauca</i>		6
<i>Gentiana newberryi</i> var. <i>newberryi</i>		6
<i>Gentiana plurisetosa</i>		6
<i>Gentiana setigera</i>		5/6
<i>Gentianella tenella</i>		6
<i>Geum rivale</i>		6
<i>Geum rossii</i> var. <i>depressum</i>		6
<i>Geum triflorum</i> var. <i>campanulatum</i>		6
<i>Hackelia hispida</i> var. <i>disjuncta</i>		6
<i>Hackelia taylorii</i>		6
<i>Hackelia venusta</i>		6
<i>Haplopappus liatrisformis</i>		6
<i>Hastingsia bracteosa</i>		6
<i>Hazardia whitneyi</i> var. <i>discoidea</i>		6
<i>Heuchera grossulariifolia</i> var. <i>tenuifolia</i>		6
<i>Hesperolinon drymarioides</i>		5
<i>Horkelia hendersonii</i>		5/6
<i>Horkelia tridentata</i> ssp. <i>tridentata</i>		6
<i>Howellia aquatilis</i>		6
<i>Hydrocotyle verticillata</i>		6
<i>Hypericum majus</i>		6
<i>Iliamna bakeri</i>		5
<i>Iliamna latibracteata</i>		6
<i>Iliamna longisepala</i>		6
<i>Isopyrum stipitatum</i>		6

Table G-1. Sensitive species in Forest Service Regions 5 (CA) and 6 (OR/WA), within the Northwest Forest Plan area (Range of the Northern Spotted Owl).		
Scientific Name	Common Name	Region
VASCULAR PLANTS (continued)		
<i>Ivesia longibracteata</i>		5
<i>Ivesia pickeringii</i>		5
<i>Ivesia shockleyi</i>		6
<i>Kalmiopsis fragrans</i>		6
<i>Keckiella lemmonii</i>		6
<i>Kobresia bellardii</i> (<i>K. myosuroides</i>)		6
<i>Lathyrus biflorus</i>		5
<i>Lewisia cantelovii</i>		5
<i>Lewisia oppositifolia</i>		5
<i>Lewisia stebbinsii</i>		5
<i>Lilium occidentale</i>		6
<i>Limnanthes floccosa</i> ssp. <i>bellingeriana</i>		6
<i>Limnanthes gracilis</i> var. <i>gracilis</i>		6
<i>Limonium californicum</i>		6
<i>Linanthus bolanderi</i>		6
<i>Linanthus harknesii</i> ssp. <i>condensatus</i>		5
<i>Linanthus nuttallii</i> ssp. <i>howellii</i>		5
<i>Liparis loeselii</i>		6
<i>Listera borealis</i>		6
<i>Lobelia dortmanna</i>		6
<i>Lobelia kalmii</i>		6
<i>Loiseleuria procumbens</i>		6
<i>Lomatium cusickii</i>		6
<i>Lomatium erythrocarpum</i>		6
<i>Lomatium greenmanii</i>		6
<i>Lomatium ochocense</i>		6
<i>Lomatium suksdorfii</i>		6
<i>Luina serpentina</i>		6
<i>Lupinus antoninus</i>		5
<i>Lupinus aridus</i> ssp. <i>ashlandensis</i>		5/6
<i>Lupinus constancei</i>		5
<i>Lupinus sabinii</i>		6
<i>Lupinus sulphureus</i> ssp. <i>kincaidii</i>		6

Table G-1. Sensitive species in Forest Service Regions 5 (CA) and 6 (OR/WA), within the Northwest Forest Plan area (Range of the Northern Spotted Owl).		
Scientific Name	Common Name	Region
VASCULAR PLANTS (continued)		
<i>Luzula arcuata</i>		6
<i>Lycopodium complanatum</i>		6
<i>Lycopodium dendroideum</i>		6
<i>Madia doris-nilesiae</i>		5
<i>Madia stebbinsii</i>		5
<i>Meconella oregana</i>		6
<i>Microseris borealis</i>		6
<i>Microseris douglasii</i> ssp. <i>douglasii</i>		6
<i>Microseris howellii</i>		6
<i>Microseris laciniata</i> ssp. <i>detlingii</i>		6
<i>Mimulus bolanderi</i>		6
<i>Mimulus clivicola</i>		6
<i>Mimulus evanescens</i>		6
<i>Mimulus hymenophyllus</i>		6
<i>Mimulus jungermannioides</i>		6
<i>Mimulus suksdorfii</i>		6
<i>Minuartia decumbent</i>		5
<i>Minuartia rosei</i>		5
<i>Minuartia stolonifera</i>		5
<i>Mirabilis macfarlanei</i>		6
<i>Monardella purpurea</i>		6
<i>Montia diffusa</i>		6
<i>Montia howellii</i>		6
<i>Navarretia tagetina</i>		6
<i>Nemacladus capillaris</i>		6
<i>Neviusia cliftonii</i>		5
<i>Nicotiana attenuata</i>		6
<i>Oxytropis borealis</i> var. <i>viscida</i>		6
<i>Oxytropis campestris</i> var. <i>gracilis</i>		6
<i>Parnassia fimbriata</i> var. <i>hoodiana</i>		6
<i>Parnassia kotzebuei</i>		6
<i>Parnassia palustris</i> var. <i>neogaea</i>		6
<i>Pedicularis howellii</i>		5/6

Table G-1. Sensitive species in Forest Service Regions 5 (CA) and 6 (OR/WA), within the Northwest Forest Plan area (Range of the Northern Spotted Owl).		
Scientific Name	Common Name	Region
VASCULAR PLANTS (continued)		
<i>Pellaea andromedaefolia</i>		6
<i>Pellaea brachyptera</i>		6
<i>Pellaea breweri</i>		6
<i>Pellaea bridgesii</i>		6
<i>Pellaea mucronata</i> ssp. <i>mucronata</i>		6
<i>Penstemon barrettiae</i>		6
<i>Penstemon filiformis</i>		5
<i>Penstemon glaucinus</i>		6
<i>Perideridia erythrorhiza</i>		6
<i>Petrophyton cinerascens</i>		6
<i>Phacelia cookei</i>		5
<i>Phacelia greenei</i>		5
<i>Phacelia minutissima</i>		6
<i>Phlox hendersonii</i>		6
<i>Phlox multiflora</i>		6
<i>Physaria didymocarpa</i> var. <i>didymocarpa</i>		6
<i>Pilularia americana</i>		6
<i>Pityopus californica</i>		6
<i>Plagiobothrys figuratus</i> ssp. <i>corallicarpus</i>		6
<i>Plagiobothrys glyptocarpus</i>		6
<i>Plantago macrocarpa</i>		6
<i>Platanthera chorisiana</i>		6
<i>Platanthera obtusata</i>		6
<i>Platanthera sparsiflora</i>		6
<i>Pleuropogon oregonus</i>		6
<i>Poa laxiflora</i>		6
<i>Poa nervosa</i> var. <i>nervosa</i>		6
<i>Polemonium carneum</i>		6
<i>Polemonium chartaceum</i>		5
<i>Polystichum californicum</i>		6
<i>Potentilla breweri</i>		6
<i>Potentilla diversifolia</i> var. <i>perdissecta</i>		6
<i>Potentilla nivea</i>		6

Table G-1. Sensitive species in Forest Service Regions 5 (CA) and 6 (OR/WA), within the Northwest Forest Plan area (Range of the Northern Spotted Owl).		
Scientific Name	Common Name	Region
VASCULAR PLANTS (continued)		
<i>Potentilla quinquefolia</i>		6
<i>Potentilla villosa</i> var. <i>parviflora</i>		6
<i>Puccinella howellii</i>		5
<i>Primula cusickiana</i>		6
<i>Raillardella pringlei</i>		5
<i>Raillardiopsis scabrida</i>		5
<i>Ranunculus cooleyae</i>		6
<i>Ranunculus populago</i>		6
<i>Ranunculus reconditus</i>		6
<i>Ribes cereum</i> var. <i>colubrinum</i>		6
<i>Romanzoffia thompsonii</i>		6
<i>Rorippa columbiae</i>		5/6
<i>Rubus acaulis</i>		6
<i>Salix candida</i>		6
<i>Salix delnortensis</i>		6
<i>Salix farriae</i>		6
<i>Salix pseudomonticola</i>		6
<i>Salix vestita</i> var. <i>erecta</i>		6
<i>Sanicula tracyi</i>		5
<i>Saxifraga adscendens</i> var. <i>oregonensis</i>		6
<i>Saxifraga cernua</i>		6
<i>Saxifraga hitchcockiana</i>		6
<i>Saxifragopsis fragarioides</i>		6
<i>Scirpus pendulus</i>		6
<i>Scirpus subterminalis</i>		6
<i>Scribneria bolanderi</i>		6
<i>Sedum laxum</i> ssp. <i>heckneri</i>		6
<i>Sedum moranii</i>		6
<i>Sedum oblanceolatum</i>		6
<i>Sedum paradisum</i> (= <i>S. obtusatum</i> ssp. <i>paradisum</i>)		5
<i>Senecio dimorphophyllus</i>		6
<i>Senecio flettii</i>		6

Table G-1. Sensitive species in Forest Service Regions 5 (CA) and 6 (OR/WA), within the Northwest Forest Plan area (Range of the Northern Spotted Owl).		
Scientific Name	Common Name	Region
VASCULAR PLANTS (continued)		
<i>Senecio hesperius</i>		6
<i>Sidalcea hirtipes</i>		6
<i>Sidalcea malviflora</i> ssp. <i>patula</i>		6
<i>Sidalcea nelsoniana</i>		6
<i>Sidalcea oregana</i> var. <i>calva</i>		6
<i>Silene campanulate</i> ssp. <i>campanulata</i>		5
<i>Silene douglasii</i> var. <i>oraria</i>		6
<i>Silene hookeri</i> ssp. <i>bolanderi</i>		6
<i>Silene seelyi</i>		6
<i>Sisyrinchium sarmentosum</i>		6
<i>Sisyrinchium septentrionale</i>		6
<i>Smilax jamesii</i>		5
<i>Sophora leachiana</i>		6
<i>Spiranthes diluvialis</i>		6
<i>Spiranthes porrifolia</i>		6
<i>Streptanthus howellii</i>		5/6
<i>Sullivantia oregana</i>		6
<i>Synthyris pinnatifida</i> var. <i>lanuginosa</i>		6
<i>Talinum sediforme</i>		6
<i>Tauschia howellii</i>		5/6
<i>Tauschia stricklandii</i>		6
<i>Teucrium canadense</i> ssp. <i>viscidum</i>		6
<i>Thalictrum alpinum</i> var. <i>hebetum</i>		6
<i>Thalictrum dasycarpum</i>		6
<i>Thelypodium brachycarpum</i>		6
<i>Thelypodium eucosmum</i>		5
<i>Thermopsis robusta</i>		6
<i>Townsendia montana</i>		6
<i>Tracyina rostrata</i>		5
<i>Trifolium plumosum</i> var. <i>plumosum</i>		6
<i>Triteleia ixioides</i> ssp. <i>anilina</i>		6
<i>Triteleia laxa</i>		6
<i>Trollius laxus</i> var. <i>albiflorus</i>		6

Table G-1. Sensitive species in Forest Service Regions 5 (CA) and 6 (OR/WA), within the Northwest Forest Plan area (Range of the Northern Spotted Owl).		
Scientific Name	Common Name	Region
VASCULAR PLANTS (continued)		
<i>Utricularia gibba</i>		6
<i>Utricularia intermedia</i>		6
<i>Vaccinium myrtilloides</i>		6
<i>Viola primulifolia</i> ssp. <i>occidentalis</i>		5/6
<i>Wolffia borealis</i>		6
<i>Wolffia columbiana</i>		6
<i>Woodwardia fimbriata</i>		6
INVERTBRATES		
<i>Acneus beeri</i>	Beer's false penny beetle	6
<i>Acneus bernelli</i>	Burnell's false penny beetle	6
<i>Agapetus denningi</i>	Denning's agapetus	6
<i>Anodonta californiensis</i>	CA floater (freshwater mussel)	5
<i>Apatania tavala</i>	Cascades apatanian caddisfly	6
<i>Eobranchcentrus gelidae</i>	Mt. Hood primitive caddisfly	6
<i>Farula davisi</i>	Green Springs Mt. caddisfly	6
<i>Farula jewetti</i>	Mt. Hood farulan caddisfly	6
<i>Farula reaperi</i>	Tombstone Prairie farulan caddisfly	6
<i>Homoplectra schuhi</i>	Schuh's Homoplectran Caddisfly	6
<i>Juga (Calibasis) occata</i>	Topaz Juga (snail)	5
<i>Limnephilus atereus</i>	Ft. Dick limnephilan caddisfly	6
<i>Nemoura wahkeena</i>	Wahkeena Falls flightless stonefly	6
<i>Neothremma andersoni</i>	Columbia Gorge caddisfly	6
<i>Ochrotrichia alsea</i>	Alsea micro caddisfly	6
<i>Oligophlebodes mosthento</i>	Tombstone Prairie Oligophlebodes caddisfly	6
<i>Pisidium (Cyclocalyx) ultramontanum</i>	Montaine peaclam	5
<i>Rhyacophila colonus</i>	Obrien rhyacophilan caddisfly	6
<i>Rhyacophila haddocki</i>	Haddock's caddisfly	6
<i>Rhyacophila unipuctata</i>	One-spot caddisfly	6
<i>Tinodes siskiyou</i>	Siskiyou caddisfly	6
FISH		
<i>Gila bicolor orgonensis</i>	Oregon Lakes tui chub	6
<i>Catostomus synderi</i>	Klamath large-scale sucker	6
<i>Cottus tenuis</i>	Slender sculpin	6

Table G-1. Sensitive species in Forest Service Regions 5 (CA) and 6 (OR/WA), within the Northwest Forest Plan area (Range of the Northern Spotted Owl).		
Scientific Name	Common Name	Region
FISH (continued)		
<i>Cottus pitensis</i>	Pit sculpin	6
<i>Lavina exilicauda chi</i>	Clear Lake hitch	5
<i>Mylophardon conocephalus</i>	Hardhead	5
<i>Oncorhynchus mykiss</i>	Interior redband trout	6
<i>Oncorhynchus tshawytscha</i>	Chinook Salmon Washington Coast Oregon Coast Southern Oregon Mid-Columbia River Summer/Fall Run Deschutes River Summer/Fall Run	6
<i>Oncorhynchus keta</i>	Chum Salmon Puget Sound/Strait of Georgia Pacific Coast	6
<i>Oncorhynchus kisutch</i>	Coho Salmon Puget Sound/Strait of Georgia Southwest WA/Lower Columbia River	6
<i>Oncorhynchus nerka</i>	Sockeye Salmon Lake Pleasant Quinault Lake Baker River	6
<i>Oncorhynchus mykiss irideus</i>	Steelhead Trout Oregon Coast Klamath Mountain Province	6
<i>Oncorhynchus mykiss pop 7</i>	McCloud River redband trout	5
<i>Oncorhynchus mykiss</i>	Steelhead Trout Klamath Mtn. Province ESU N. California Province ESU	5
<i>Oncorhynchus clarkii</i>	Coastal run cutthroat trout	5
<i>Oncorhynchus clarki clarki</i>	Coastal Cutthroat Trout Puget Sound Olympic Peninsula Oregon Coast Southern Oregon Coast	6

Table G-1. Sensitive species in Forest Service Regions 5 (CA) and 6 (OR/WA), within the Northwest Forest Plan area (Range of the Northern Spotted Owl).		
Scientific Name	Common Name	Region
FISH (continued)		
<i>Oncorhynchus tshawytscha</i>	Chinook Salmon Central Valley spring run ESU Central Valley fall run ESU S. OR & CA coastal ESU, spring run Upper Klamath/Trinity ESU, spring run Upper Trinity River ESU, fall run	5
AMPHIBIANS		
<i>Dicamptodon copei</i>	Cope's giant salamander	6
<i>Plethodon elongatus</i>	Del Norte salamander	6
<i>Plethodon larsellii</i>	Larch Mountain salamander	6
<i>Plethodon stormi</i>	Siskiyou Mountain Salamander	6
<i>Rhyacriton variegatus</i>	Southern torrent salamander	5
<i>Rana auroa</i>	Red-legged frog	6
<i>Rana aurora aurora</i>	Northern red-legged frog	5
<i>Rana boylei</i>	Foothill yellow-legged frog	5
<i>Rana cascade</i>	Cascade frog	5
<i>Rana pretiosa</i>	Oregon spotted frog	6
<i>Rana luteiventris</i>	Columbia spotted frog	6
REPTILES		
<i>Clemmys marmorata marmorata</i>	Northwestern pond turtle	5/6
<i>Chrysemys picta</i>	Painted turtle	6
<i>Lampropeltis getulus</i>	Common kingsnake	6
<i>Lampropeltis zonata</i>	California mountain kingsnake	6
BIRDS		
<i>Accipiter gentilis</i>	Northern goshawk	5
<i>Agelaius tricolor</i>	Tricolored blackbird	6
<i>Bartramia longicauda</i>	Upland sandpiper	6
<i>Buteo regalis</i>	Ferruginous hawk	6
<i>Buteo swainsoni</i>	Swainson's hawk	6
<i>Centrocercus urophasianus</i>	Western sage grouse	6
<i>Coturnicops noveboracensis</i>	Yellow rail	5/6

Table G-1. Sensitive species in Forest Service Regions 5 (CA) and 6 (OR/WA), within the Northwest Forest Plan area (Range of the Northern Spotted Owl).		
Scientific Name	Common Name	Region
BIRDS (continued)		
<i>Empidonax traillii</i>	Willow flycatcher	5
<i>Falco peregrinus anatum</i>	American peregrine falcon	6
<i>Gavia immer</i>	Common loon	6
<i>Grus canadensis tabida</i>	Greater sandhill crane	5/6
<i>Histrionicus histrionicus</i>	Harlequin duck	6
<i>Leucosticte arctoa atrata</i>	Black rosy finch	6
<i>Pelecanus erythrorhynchos</i>	American white pelican	6
<i>Numenius americanus</i>	Long-billed curlew	6
<i>Strix nebulosa</i>	Great gray owl	5
MAMMALS		
<i>Antrozous pallidus</i>	Pallid bat	5
<i>Arborimus albipes</i>	White-footed vole	6
<i>Brachylagus idahoensis</i>	Pygmy rabbit	6
<i>Corynorhinus townsendii</i> (<i>Plecotus townsendii townsendii</i>)	Townsend's or Pacific western big-eared bat	5/6
<i>Gulo gulo luteus</i>	California wolverine	5/6
<i>Lasiurus blossevillii</i>	Western red bat	5
<i>Martes americana</i>	American marten	5
<i>Martes pennanti pacifica</i>	Pacific fisher	5
<i>Ovis canadensis californica</i>	California bighorn	6
<i>Vulpes vulpes necator</i>	Sierra Nevada red fox	5

Table G-2. Species federally listed as endangered, threatened, or proposed for listing, and designated and proposed critical habitat on Forest Service and BLM administered lands within the Northwest Forest Plan area.

Scientific Name	Common Name	Current ESA Status
VASCULAR PLANTS		
<i>Alopecurus aequalis</i> var. <i>sonomensis</i>	Sonoma alopecurus	Endangered
<i>Arabis macdonaldiana</i>	MacDonald's rockcress	Endangered
<i>Arenaria paludicola</i>	Marsh sandwort	Endangered
<i>Astragalus clarianus</i>	Clara Hunt's milkvetch	Endangered
<i>Astragalus applegatei</i>	Applegate's milkvetch	Endangered
<i>Castilleja affinis neglecta</i>	Tiburon paintbrush	Endangered
<i>Castilleja levisecta</i>	Golden Indian paintbrush	Threatened
<i>Chorizanthe howellii</i>	Howell's spineflower	Endangered
<i>Chorizanthe valida</i>	Sonoma spineflower	Endangered
<i>Delphinium bakeri</i>	Baker's larkspur	Endangered
<i>Delphinium luteum</i>	Yellow larkspur	Endangered
<i>Erigeron decumbens</i> var. <i>decumbens</i>	Willamette daisy	Endangered
<i>Erysimum menziesii</i>	Menzies' wallflower	Endangered
<i>Fritillaria gentneri</i>	Gentner's fritillary	Endangered
<i>Hesperolinon congestum</i>	Marin dwarf-flax	Threatened
<i>Hackelia venusta</i>	Showy stickweed	Proposed Endangered
<i>Howellia aquatilis</i>	Water howellia	Threatened
<i>Layia carnosa</i>	Beach layia	Endangered
<i>Lasthenia burkei</i>	Burke's goldfields	Endangered
<i>Lasthenia cojugens</i>	Contra costa goldfields	Proposed Endangered
<i>Lilium occidentale</i>	Western lily	Endangered
<i>Limnanthes floccosa</i> ssp. <i>grandiflora</i>	Large-flowered wooly meadowfoam	Proposed Endangered
<i>Lomatium bradshawii</i>	Bradshaw's lomatium	Endangered
<i>Lomatium cookii</i>	Cook's lomatium	Proposed Endangered
<i>Lupinus sulphureus</i> var. <i>kincaidii</i>	Kincaid's lupine	Threatened
<i>Lupinus tidestromii</i> var. <i>layneae</i>	Pt. Reyes clover lupine	Endangered

Table G-2. Species federally listed as endangered, threatened, or proposed for listing, and designated and proposed critical habitat on Forest Service and BLM administered lands within the Northwest Forest Plan area.		
Scientific Name	Common Name	Current ESA Status
VASCULAR PLANTS (continued)		
<i>Lupinus tidestromii</i> var. <i>tidestromii</i>	Tidestrom's clover lupine	Endangered
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	Many-flowered navarretia	Endangered
<i>Orcuttia tenuis</i>	Slender Orcutt grass	Threatened
<i>Phlox hirsuta</i>	Yreka phlox	Endangered
<i>Plagiobothrys hirtus</i>	Hairy (Rough) popcorn flower	Endangered
<i>Plagiobothrys strictus</i>	Calistoga allocarya	Endangered
<i>Poa napensis</i>	Napa bluegrass	Endangered
<i>Sidalcea nelsoniana</i>	Nelson's checker-mallow	Threatened
<i>Sidalcea oregana</i> var. <i>calva</i>	Wenatchee Mountains checkermallow	Endangered
<i>Sidalcea oregana</i> var. <i>valida</i>	Kenwood Marsh checkermallow	Endangered
<i>Spiranthes diluvialis</i>	Ute ladies'-tresses	Threatened
<i>Thlaspi montanum</i> var. <i>californicum</i>	Kneeland Prairie penny-cress	Endangered
<i>Trifolium amoenum</i>	Showy Indian clover	Endangered
INVERTEBRATES		
<i>Branchinecta conservatio</i>	Conservancy fairy shrimp	Endangered
<i>Brachinecta lynchi</i>	Vernal pool fairy Shrimp	Threatened
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	Threatened
<i>Icaricia icarioides fenderi</i>	Fender's blue butterfly	Endangered
<i>Icaricia icarioides missionensis</i>	Mission blue butterfly	Endangered
<i>Incisalia mossii bayensis</i>	San Bruno elfin butterfly	Endangered
<i>Lepidurus packardi</i>	Vernal pool tadpole shrimp	Endangered
<i>Lycaeides argyrognomon lotis</i>	Lotis blue butterfly	Endangered
<i>Pacifastacus fortis</i>	Shasta (= placid) crayfish	Endangered
<i>Speyeria callippe callippe</i>	Callippe silverspot butterfly	Endangered
<i>Speyeria zerene behrensii</i>	Behren's silverspot butterfly	Endangered

Table G-2. Species federally listed as endangered, threatened, or proposed for listing, and designated and proposed critical habitat on Forest Service and BLM administered lands within the Northwest Forest Plan area.

Scientific Name	Common Name	Current ESA Status
INVERTEBRATES (continued)		
<i>Speyeria zerene hippolyta</i>	Oregon silverspot butterfly	Threatened, Designated Critical Habitat
<i>Speyeria zerene myrtleae</i>	Myrtle's silverspot butterfly	Endangered
<i>Syncaris pacifica</i>	California freshwater shrimp	Threatened
FISH		
<i>Chasmistes brevirostris</i>	Shortnose sucker	Endangered
<i>Deltistes luxatus</i>	Lost River sucker	Endangered
<i>Eucyclogobius newberryi</i>	Tidewater goby	Endangered
<i>Hypomesus transpacificus</i>	Delta smelt	Threatened
<i>Oncorhynchus clarki clarki</i>	Southwestern WA/Columbia River coastal cutthroat trout ESU	Proposed Threatened
<i>Oncorhynchus kisutch</i>	Central California coho salmon ESU	Threatened, Designated Critical Habitat
<i>Oncorhynchus kisutch</i>	Oregon Coast coho salmon ESU	Threatened, Designated Critical Habitat
<i>Oncorhynchus kisutch</i>	Southern OR/Northern CA Coasts coho salmon ESU	Threatened, Designated Critical Habitat
<i>Oncorhynchus keta</i>	Columbia River chum salmon ESU	Threatened, Designated Critical Habitat
<i>Oncorhynchus keta</i>	Hood Canal summer-run chum salmon ESU	Threatened, Designated Critical Habitat
<i>Oncorhynchus mykiss</i>	CA Central Valley steelhead ESU	Threatened, Designated Critical Habitat
<i>Oncorhynchus mykiss</i>	Central California Coast steelhead ESU	Threatened, Designated Critical Habitat
<i>Oncorhynchus mykiss</i>	Lower Columbia River steelhead ESU	Threatened, Designated Critical Habitat
<i>Oncorhynchus mykiss</i>	Middle Columbia River steelhead ESU	Threatened, Designated Critical Habitat
<i>Oncorhynchus mykiss</i>	Northern California steelhead ESU	Threatened

Table G-2. Species federally listed as endangered, threatened, or proposed for listing, and designated and proposed critical habitat on Forest Service and BLM administered lands within the Northwest Forest Plan area.		
Scientific Name	Common Name	Current ESA Status
FISH (continued)		
<i>Oncorhynchus mykiss</i>	Snake River Basin steelhead ESU (migrates thru NFP area)	Threatened, Designated Critical Habitat
<i>Oncorhynchus mykiss</i>	Upper Columbia River steelhead ESU	Endangered, Designated Critical Habitat
<i>Oncorhynchus mykiss</i>	Upper Willamette River steelhead ESU	Threatened, Designated Critical Habitat
<i>Oncorhynchus nerka</i>	Ozette Lake sockeye salmon ESU	Threatened, Designated Critical Habitat
<i>Oncorhynchus nerka</i>	Snake River sockeye salmon ESU(migrates thru NFP area)	Endangered, Designated Critical Habitat
<i>Oncorhynchus tshawytscha</i>	CA Central Valley chinook salmon ESU	Threatened, Designated Critical Habitat
<i>Oncorhynchus tshawytscha</i>	CA Coastal chinook salmon ESU	Threatened, Designated Critical Habitat
<i>Oncorhynchus tshawytscha</i>	Lower Columbia River chinook salmon ESU	Threatened, Designated Critical Habitat
<i>Oncorhynchus tshawytscha</i>	Puget Sound chinook salmon ESU	Threatened, Designated Critical Habitat
<i>Oncorhynchus tshawytscha</i>	Sacramento River winter-run chinook salmon ESU	Endangered, Designated Critical Habitat
<i>Oncorhynchus tshawytscha</i>	Upper Willamette River chinook salmon ESU	Threatened, Designated Critical Habitat
<i>Oncorhynchus tshawytscha</i>	Upper Columbia River spring-run chinook salmon ESU	Endangered, Designated Critical Habitat
<i>Oncorhynchus tshawytscha</i>	Snake River fall-run chinook salmon ESU (migrates thru NFP area)	Threatened, Designated Critical Habitat
<i>Oncorhynchus tshawytscha</i>	Snake River spring/summer-run chinook salmon ESU (migrates thru NFP area)	Threatened, Designated Critical Habitat

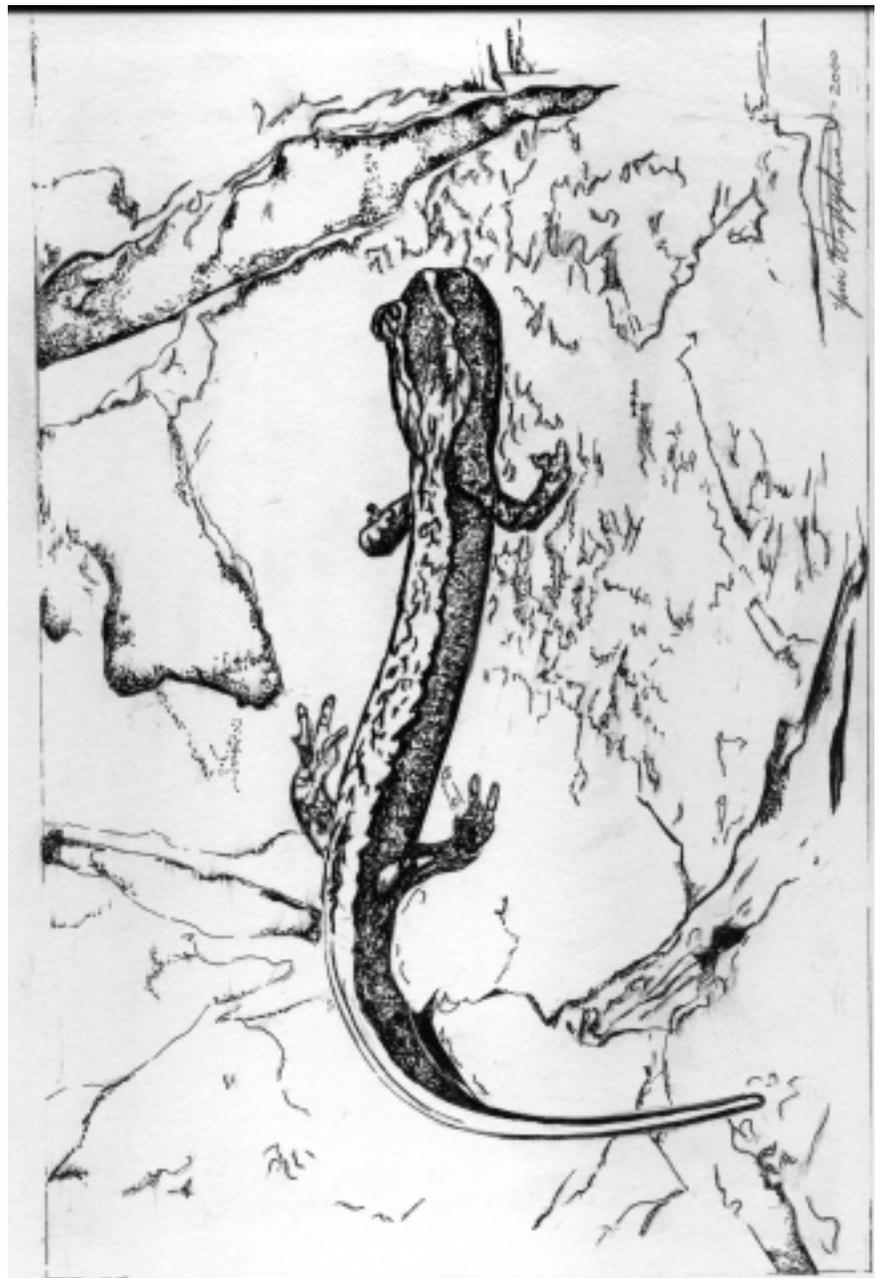
Table G-2. Species federally listed as endangered, threatened, or proposed for listing, and designated and proposed critical habitat on Forest Service and BLM administered lands within the Northwest Forest Plan area.		
Scientific Name	Common Name	Current ESA Status
FISH (continued)		
<i>Oregonichthys (=Hybopsis) crameri</i>	Oregon chub	Endangered
<i>Pogonichtys macrolepidotus</i>	Sacramento River splittail	Threatened
<i>Salvelinus confluentus</i>	Klamath River bull trout	Threatened
<i>Salvelinus confluentus</i>	Columbia River bull trout	Threatened
<i>Salvelinus confluentus</i>	Puget Sound bull trout	Proposed Threatened
AMPHIBIANS		
<i>Rana aurora draytonii</i>	California red-legged frog	Threatened, Proposed Critical Habitat
REPTILES		
<i>Dermochelys coriacea</i>	Leatherback turtle	Endangered, Designated Critical Habitat
<i>Chelonia mydas (incl. agassizii)</i>	Green turtle	Threatened
<i>Lepidochelys olivacea</i>	Olive (=Pacific) ridley sea turtle	Threatened
<i>Caretta caretta</i>	Loggerhead turtle	Threatened
BIRDS		
<i>Brachyramphus marmoratus</i>	Marbled murrelet	Threatened, Designated Critical Habitat
<i>Branta canadensis leucopareia</i>	Aleutian Canada goose	Threatened
<i>Charadrius alexandrinus nivosus</i>	Western snowy plover (coastal populations)	Threatened, Designated Critical Habitat
<i>Haliaeetus leucocephalus</i>	Northern bald eagle	Threatened
<i>Pelecanus occidentalis</i>	Brown pelican	Endangered
<i>Rallus longirostris obsoletus</i>	California clapper rail	Endangered
<i>Strix occidentalis caurina</i>	Northern spotted owl	Threatened, Designated Critical Habitat
MAMMALS		
<i>Aplodontia rufa nigra</i>	Point Arena mountain beaver	Endangered
<i>Canis lupus</i>	Gray wolf	Endangered
<i>Eumetopias jubatus</i>	Steller (= northern) sea-lion	Endangered

Table G-2. Species federally listed as endangered, threatened, or proposed for listing, and designated and proposed critical habitat on Forest Service and BLM administered lands within the Northwest Forest Plan area.

Scientific Name	Common Name	Current ESA Status
MAMMALS (continued)		
<i>Lynx canadensis</i>	Canada lynx	Threatened
<i>Odocoileus virginianus leucurus</i>	Columbian white-tailed deer	Endangered
<i>Reithrodontomys raviventris</i>	Salt marsh harvest mouse	Endangered
<i>Ursus arctos</i>	Grizzly bear	Threatened

Appendix H

Letters from Federal Agencies, State and Local Governments, American Indian Tribes and, Elected Officials



Appendix H

Letters from Federal Agencies, State and Local Governments, American Indian Tribes and, Elected Officials

This appendix contains comment letters received on the Draft Supplemental Environmental Impact Statement For Amendment to the Survey and Manage, Protection Buffer, and Other Mitigation Measures Standards and Guidelines from Federal, State, and local government agencies, American Indian Tribal organizations, and elected officials. Also included are letters from the Interagency Advisory Committee (IAC) and a number of Provincial Advisory Committees (PACs) established by the Northwest Forest Plan.

The Environmental Protection Agency (EPA) has a legal obligation under Section 309 of the Clean Air Act to review and comment on environmental impact statements. Their letter reviewing the Draft SEIS appears at the beginning of this appendix. An explanation of the EPA rating criteria is also included.

List of Letters Received

Environmental Protection Agency
EPA Rating System Criteria
Department of Energy, Bonneville Power Administration

Oregon State Department of Agriculture

Douglas County Board of Commissioners
Jackson County Commissioner, Sue Kupilas
San Miguel County, Board of Commissioners
County of Siskiyou, Board of Supervisors

Coquille Indian Tribe
Point No Point Treaty Council
The Confederated Tribes of the Warm Springs Reservation of Oregon

Congress of the United States

Washington State House of Representatives

Intergovernmental Advisory Committee
California Coast Provincial Advisory Committee
Deschutes Provincial Advisory Committee
Willamette Provincial Advisory Committee

S488

CAET RECD

FEB 25 2000

USDA Forest Service - CAET
 P. O. Box 221090
 Salt Lake City, UT 84122

From: California Coast Provincial Advisory Committee

Re: COMMENTS, DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT
 STATEMENT FOR THE SURVEY AND MANAGE STANDARDS AND
 GUIDELINES OF THE NORTHWEST FOREST PLAN

Date: February 18, 2000

The California Coast Provincial Advisory Committee (CCPAC) is a federally chartered advisory group comprised of federal and state agency representatives, local officials, tribal representatives and non-governmental interest group delegates who work to promote the objectives of the federal Northwest Forest Plan (NFP).

At its meeting on February 2, 2000, the CCPAC considered the Draft Supplemental Environmental Impact Statement (DSEIS) for the Survey and Manage Standards and Guidelines of the Northwest Forest Plan (NFP). The consideration included a review of the draft and presentations about the draft by a representative from the DSEIS Team and Forest Service biologists who will be responsible for the implementation of the standards and guidelines. As a result of this review, the federal and non-federal CCPAC members present approved, by consensus, the following comments and recommendations to be submitted as part of the public comment on the document.

1. Re: Appendix G, p. 468, we recommend that you provide the actual annual timber harvest statistics within the area of the NFP for the years 1994-1999, segregated by National Forest and Bureau of Land Management District, and, if the information is so available, further by land management category such as Matrix and Late Successional Reserve lands.
2. Strategic surveys are critical to the success of the Survey and Management program. Therefore, clarification should be provided with regard to the administrative responsibility for the initiation of the strategic survey process and for the conduct of the strategic surveys. Field representatives should be included in the planning for strategic surveys.
3. Provision should be made to provide adequate funding for the conduct of the strategic surveys and this funding should not come from the existing operating budgets of the federal land management agencies. This funding should be available throughout life of the Survey and Manage Plan, with a significant infusion of funds in the first five years to ensure it can be implemented.

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 SURVEY AND
 MANAGE

4. The provisions for the consideration of changing categories or delisting of species are appropriate but there should be a definite timeline for action on requests for recategorizing or delisting. Timely feedback to forests and districts is critical to the effective implementation of this process. It is recommended that consideration be given to fully funding taxa and S & M teams for at least the next five years so that implementation of the selected alternative can proceed effectively. As long as team members are performing these duties in only a collateral capacity, the process will be considerably slowed.

5. An effectiveness monitoring program is needed to evaluate the effects of adaptive management actions. In addition, a monitoring or research program is needed to evaluate the effects, immediate and longer term, of disturbance activities on Survey and Manage species.

6. The shift from "ground disturbing" to "habitat disturbing" as the determination of when certain Survey and Manage actions must be taken is a welcome change.

7. Because of substantial environmental differences between conditions within Washington and Oregon and that of California, there is an urgent need to provide funding and designated staff to increase the representation and participation of California federal agencies on deliberative groups that are developing standards, guidelines, and protocols for the NFP.

The CCPAC respectfully requests a response that indicates the actions that are taken in response to the comments and recommendations listed above.

Submitted by the Designated Federal Official, Daniel K. Chisholm, on behalf of the CCPAC. If you have questions or responses regarding these comments, please send them to me and I will distribute them to the CCPAC members.



DANIEL K. CHISHOLM
Forest Supervisor
Mendocino National Forest

Congress of the United States

Washington, DC 20515

March 3, 2000

S1231

The Honorable George Frampton
 Chairman
 Council on Environmental Quality
 Old Executive Office Building
 Washington, D.C. 20500

Dear Chairman Frampton,

We are writing to express our on-going interest in the management of Northwest forests under the Northwest Forest Plan. As you know, the Northwest Forest Plan, which was adopted in 1994, was designed to respond to the competing interests in the Northwest, including the need for a stable supply of forest products and, equally important, habitat for more than 1000 species associated with late-successional and old-growth forests.

On December 3, 1999, the Bureau of Land Management (BLM) and Forest Service managers announced the release of the Draft Supplemental Environmental Impact Statement to amend the "survey and manage" mitigation measures of the Northwest Forest Plan. The document is supposed to incorporate what the Forest Service and BLM have learned during the last five years about implementing the "survey and manage" provisions of the Northwest Forest Plan. These provisions detail how the Forest Service and BLM should manage approximately 400 rare and little known species.

We understand the recommendations in the draft document were designed to incorporate the most up-to-date science, better protect rare and little known species, and use the agencies' limited resources more efficiently. When finalized, the document will provide new guidance on how the agency implements the survey and manage provision. While we agree with these goals, concerns have been raised that the draft does not consider all possible alternatives.

We request that a "no logging old growth" alternative be considered in the Draft Supplemental Environmental Impact Statement. The alternative could include provisions to mitigate for loss in production from old growth forests to come from second and third growth stands. Any changes to the Northwest Forest Plan are monumental and we believe it is important for all possible alternatives to be considered. The purpose of this request is not to advocate a specified solution, but assure all potential options are considered.

Thank you for your attention to this matter.

With warm regards,



Adam Smith
 Member of Congress



David Wu
 Member of Congress

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Frampton/page 02

Lynn Woolsey

J. Anstee

Robert

Earl Blumauer

Sam Lane

Jim McDevitt

Robert J. Matsui

Nancy Pelosi

George Miller

Mike Simpson

Darlene Hooley

Barbara Lee

S1231

List of Cosigners:

Lynn Woolsey (CA)
Member of Congress

Jay Inslee (WA)
Member of Congress

Brian Baird (WA)
Member of Congress

Earl Blumenauer (OR)
Member of Congress

Sam Farr (CA)
Member of Congress

Jim McDermott (WA)
Member of Congress

Robert Matsui (CA)
Member of Congress

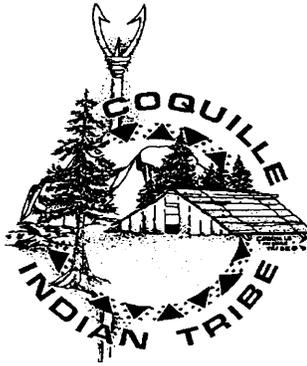
Nancy Pelosi (CA)
Member of Congress

George Miller (CA)
Member of Congress

Mike Thompson (CA)
Member of Congress

Darlene Hooley (OR)
Member of Congress

Barbara Lee (CA)
Member of Congress



COQUILLE INDIAN TRIBE

P.O. Box 783 • 3050 Tremont • North Bend, OR 97459
Telephone 541-756-0904 • FAX 541-756-0847

S152

CAET RECEIVED

FEB 07 2000

Survey and Manage SEIS
Content Analysis Enterprise Team
Attn: USDA Forest Service - CAET
P.O. Box 221090
Salt Lake City, UT 84122

2/2/00

Re: Public Comments on DSEIS

Dear Content Analysis Enterprise Team:

The Coquille Indian Tribe currently manages approximately 5,400 acres of forestlands (Coquille Forest) under the same standards and guidelines as the adjacent federal land management agencies (Coos Bay District BLM). This places us in a unique position as the only Tribe in the nation that must conduct the Survey and Manage / Protection Buffer (S&M/PB) standards and guidelines in the Record of Decision (ROD) for the Northwest Forest Plan (NFP). From that standpoint, these comments may be considered both public and internal.

The Tribe wishes first to recognize that the problems associated with the S&M/PB species are mainly due to an overwhelming lack of knowledge about many of these species and how to find them. As stated by Phil Hall during a DSEIS briefing, the S&M/PB standards and guidelines were thrust into the NFP at the last moment, and the best science was not utilized. To set the context, Figure 1-1 of the DSEIS clearly shows that regardless of which alternative is chosen the relative benefit to S&M/PB species is not significantly different. In fact, Phil Hall stated that all but two species remain viable under all alternatives. So the ecological difference between the alternatives is minor, and should be weighted appropriately in the decision.

In contrast to this, only 14 % of federal forests are available for harvest under the NFP, and greater than 50% of the Coquille Forest is already under a reserve status. This creates a significant financial difference between the four alternatives for not only the agencies but also this Tribe. This cost/benefit ratio should heavily weight any decision because the alternatives are virtually identical in relationship to species viability.

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With this in mind, we wish to submit our comments on all four alternatives:

No Action Alternative:

- To continue to survey for species which are virtually unidentifiable (either because they are not well described, or they do not reveal themselves in a timely manner) would give opportunity for further lawsuits and continue an unreasonable financial burden on this Tribe. The No Action Alternative would also leave in place the conflicting direction, which has led to a great deal of difficulty in adaptively managing our Forest. Without a doubt, any of the alternatives would be more favorable than this, and would give clearer direction as to “how” to manage, not just “what” to manage.

Provisions Common to Alternatives 1, 2 and 3:

- The Tribe strongly endorses the logical criteria that identify “how” a S&M/PB species is placed on the list or taken off. Subsequently we also endorse the removal of all species from the S&M/PB list that do not meet these criteria.
- Strategic surveys would increase the cost benefit for surveying difficult species. Spending money looking for species where you expect them and when you expect them rather than everywhere at all times relieves the Tribe of an undue financial burden with little scientific value.
- The trigger for surveying the S&M/PB species now reads “pre-ground disturbing activity” and is proposed to be changed to “pre-habitat disturbing activity”. Regardless of concern expressed by some environmentalists as to “who” is qualified to identify habitat, the Tribe feels that this is the only logical understanding of what the authors meant in the original NFP. Looking for an aquatic vertebrate in the desert makes no sense. This is a necessary edit.
- The Tribe also endorses the proposed criteria for determining whether a survey is practical.

Alternative 1 – Redefine Categories based on Species Characteristics:

- Alternative one from a balanced ecological and financial commitment is the most logical alternative.
 1. It successfully manages the S&M/PB species without placing a required timeline for completing the Strategic Surveys. Timelines have rarely been met and recently have been the impetus behind several lawsuits. This will allow Agencies and the Tribe to prioritize strategic surveys where it is financially possible and practically useful.
 2. While not the greatest financial relief, this alternative does decrease the current estimated survey costs by 82%.

Alternative 2 – Remove or Reassign Uncommon Species Within 5 Years:

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- This alternative would have been the preferred alternative for the Tribe if the 5-year timeline weren't required. The survey effort needed to complete the strategic surveys seems to create another opportunity for lawsuits when they are not completed as projected. Because of a lack of knowledge at the time the NFP/ROD was developed concerning the actual magnitude of effort to comply with the standards and guides, a failure to meet NFP timelines seems predestined.

Alternative 3 – Add Equivalent-Effort Surveys and 250-Meter Rare Site Buffers:

- This alternative is the most simple to follow, however, it is also the most impacting to the Tribe's small land base. With about 2000 acres currently available for harvest and a likelihood that endangered species may occupy several hundred acres of that, we cannot afford to play it safe around every "rare" species by removing scientifically valid options in lieu of a more simple and safe approach.
- Based upon Figure 3& 4-9, this alternative would set aside 42% of the currently harvestable forest. With a requirement to balance ecosystem management with public needs, this alternative would disregard human value in place of management ease. The Tribe feels that it is the Agencies' responsibility to create a balance between ecology and financial responsibility to the public. This takes the "quick fix" approach and limits options, likely over protecting species for the sake of ease. The Tribe very strongly stands against this non-scientific approach to land management.

As a result of our evaluation of the DSEIS, the Tribe recommends selection of Alternative I as the preferred alternative.

Sincerely,



Ed Metcalf
Chairman

cc: Gary Varner, Forester
BIA – Siletz Agency

L61110.979



Department of Energy

Bonneville Power Administration
 P.O. Box 3621
 Portland, Oregon 97208-3621

March 3, 2000

In reply refer to: KECN-4

Survey and Manage SEIS
 Content Analysis Enterprise Team
 Attn: USDA Forest Service - CAET
 P.O. Box 221090
 Salt Lake City, UT 84122

Re: Comments on The Survey and Manage SDEIS

Dear Content Analysis Enterprise Team:

This letter represents Bonneville Power Administration's (BPA) comments on the Survey and Manage Draft Supplemental Environmental Impact Statement (SDEIS). Please incorporate and/or respond to these comments as reflected in the Final EIS.

One of the concerns BPA would like to address is the possible impact it might have on BPA's vegetation management program. BPA provides electricity throughout the Pacific Northwest using a network of transmission lines and substations. One of BPA's public responsibilities is to assure adequate, economical, efficient and reliable power supply to the Pacific Northwest while fulfilling environmental and social obligations (such as protection and enhancement of fish and wildlife). To maintain safe and reliable power, BPA must control the vegetation, including large trees around electrical transmission facilities. Those facilities include the rights-of-way and the area next to them, substations, access roads, microwave sites and beam paths, and maintenance facilities.

A major electric power outage occurred on August 10, 1996, caused in part by trees that had grown too close to transmission lines. The outage affected a number of other utilities linked to the federal system. As a result, BPA decided to improve its efficiency and effectiveness on brush control practices and produce an EIS to look at how different vegetation control methods affect water quality, plant communities, fish and wildlife populations, land use, and other resources. Because many facilities are located on lands managed by the U.S. Forest Service (USFS) and Bureau of Land Management (BLM), BPA has been working closely with both agencies as partners in developing the vegetation management program EIS. A consistency between the USFS, BLM, and BPA needs to be established within vegetation management programs. The need of keeping trees out of the transmission lines to prevent power outages and the need to have resource management must have balance between the two. What efforts and communication plans are currently being done to facilitate these needs?

BPA currently uses the Northwest Forest Plan Riparian Reserves and Water Buffers list when applying herbicides within USFS-designated water buffer zones. In what way, if any, will this document affect the Riparian Reserves and Water Buffers listed by stream type and buffer size?

On page 29 (second paragraph) of Chapter 2, it mentions the completion of 1999 field survey data and the possible implication it might have on species category assignments. How often will new field survey data in the future be used to reassign species categories? Will this be re-evaluated every year, every five years, or on an as-needed basis? What types of data might be found that would change a species category assignment?

Under Alternative 2, there is concern of a substantial decline in Oregon red tree vole populations throughout large portions of its range and that the remaining populations could become more isolated. Why does it take 5 years to complete strategic surveys prior to determining whether to consider the red tree vole on the Agencies' sensitive species list? If alternative 2 is chosen, will the decline of red tree voles be compared to the populations of the northern spotted owl? Is the USFS aware of the agreement and protocol that BPA has established with the USFWS regarding the northern spotted owl? It seems that only certain districts of the USFS are aware of it and other districts are not. There should be a clear understanding and awareness of this protocol between USFS, BLM, BPA and USFWS. What effects will the loss of protection for approximately 12,000 acres of late-successional habitat at approximately 5,100 locations across the Northwest Forest Plan area have on the Marbled Murrelet, the Northern Spotted Owl and the Northern Bald Eagle?

BPA would like to thank you for the opportunity to comment on the SDEIS. Please contact me if you require additional information or have any questions.

Sincerely,

Eric N. Powers
Environmental Specialist



United States
Department of
Agriculture

Forest
Service

Deschutes
National
Forest

1645 Highway 20 East
Bend, OR 97701

File Code: 1350-2

Date: March 1, 2000

Route To:

Subject: Deschutes Provincial Advisory Committee Comments to the Survey and Manage
SDEIS

To: Regional Forester, Harv Forsgren

Dear Harv:

Enclosed are the comments from the Deschutes Provincial Advisory Committee (PAC). These represent a consensus of opinion. Please recognize that this diverse group of people offer a full range of opinions and have worked very hard to find areas of commonality. Letters that reflect individual comments from members will be submitted to the team separately. Thank you for the opportunity to comment.

Sincerely,



 SALLY COLLINS
Forest Supervisor, Deschutes National Forest

Enclosure

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SURVEY AND
MANAGE



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Deschutes Provincial Advisory Committee Comments to the Survey and Manage DSEIS

We recommend analysis of a broader range of alternatives. There is an opportunity for finer gradations between the limits proposed in the offered alternatives. Additional alternatives should be explored between Alternatives Two and Three offered as well as a display of the effects associated with the abandonment of the Survey and Manage program and reliance on the reserve system alone and another alternative that prohibits the cutting of old growth timber, anywhere.

Specific Points:

Page 24: It is stated that “the changes proposed . . . would help achieve (and not alter) the relationship between levels of multiple-use goods and services originally projected.” This statement is a conclusion that is not supported by the analysis. The probable average annual timber sale level disclosed in the *Record of Decision on Management For Habitat for Late-successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* was 1.1 billion board feet. Now, in the Survey and Manage DSEIS, this is documented on page xxix as 811 Million Board Feet (current declared) or 680 Million Board Feet (No-Action Alternative). Given the unknown number of rare site buffers that could be as large as the arbitrary 250-meters listed in Alternative 3, how could the referenced Page 24 statement be true for the timber output? Using timber as a surrogate (the only one qualified) makes the statement questionable as applied to all outputs.

Page 63: The subcommittee encourages the use of the best scientific knowledge and the use of the best taxon experts in the field. This is especially important when evaluating new information pertaining to adding, removing, or changing a species in Survey and Manage.

Page 67: In Alternative 3, the 250-meter buffers around occupied sites of rare species is an inappropriately rigid standard and should have more flexibility. The variety of organisms and the potential range of habitats do not allow any “one size fits all” prescription to work. Language similar to the direction for managing known sites (pages C-4, C-5) in the Standards and Guidelines would be more appropriate.

The priority between forest ecosystem health and protection of survey and manage species is unclear. The DSEIS refers several times to the impact of management activities, particularly prescribed fire. On one hand, the document calls for species persistence; on the other hand, some management activities are a necessary remedy for declining forest health on a landscape scale. This document could provide more guidance.

Deschutes Provincial Advisory Committee Member Affiliation

Sally Collins	DFO, Deschutes Forest Supervisor
Glen Ardt	Oregon Department of Fish and Wildlife
Barbara Lee	Coordinator, Deschutes County Watershed Council
Dan Ericksen	Wasco County Commissioner
Robert Schuppe	Hood River County Commissioner
Dave Leslie	Deschutes County Planning
Clay Penhollow	Confederated Tribes of Warm Springs
Don Gentry	Klamath Tribe
Tim Lillebo	Oregon Natural Resources Council
Kent Gill	Friends of the Metolious
Ted Young	Crown Pacific
Brad Fowler	Fowler Timber Co.
Leslie Hiatt	"At Large", Special Forest Products
Dave McClain	"At Large", Consultant
Christopher Stecher	Mt. Bachelor Ski Area
Dennis Oliphant	Sun Country Tours
Reis Hoyt	"At Large", School Teacher
Anne Saxby	"At Large", Hood River Soil and Water Conservation District Manager
Richard Nelsen	"At Large", Grazing Permittee
Gerald Henrickson	Bureau of Indian Affairs, Confederated Tribes of Warm Springs
Boyd Wickman	Retired, USFS Research
Mark Shaw	Bonneville Power Administration
Jerry Cordova	US Fish and Wildlife Service
William Kirchner	Environmental Protection Agency
Dick Nichols	Oregon Department of Environmental Quality
Shaaron Netherton	Bureau of Land Management
Randy Tweten	National Marine Fisheries Service
*Mollie Chaudet	USFS/Province Liaison

* Not a Chartered Member

5938



BOARD OF COMMISSIONERS

DOUG ROBERTSON JOYCE MORGAN MIKE WINTERS

1036 S.E. Douglas Ave., Room 217 • Roseburg, Oregon 97470 • (503) 440-4201

February 29, 2000

Survey and Manage SEIS
Content Analysis Enterprise Team
Attn: USDA Forest Service-CAET
P.O. Box 221090
Salt Lake City, Utah 84122

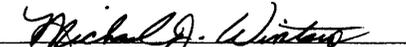
RE: Draft Supplemental Environmental Impact Statement For
Amendment to the Survey and Manage, Protection Buffer,
and Other Mitigating Measures Standards and Guidelines.

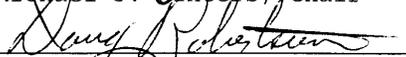
Dear Enterprise Team:

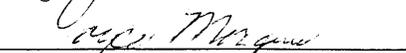
The Board of Commissioners of Douglas County, Oregon has reviewed the Draft Supplemental Environmental Impact Statement For Amendment to the Survey and Manage, Protection Buffer, and Other Mitigating Measures Standards and Guidelines relative to revising the Northwest Forest Plan. We are submitting the enclosed comments for your review.

As indicated in more detail in our enclosed comments, we are very concerned that the proposed amendment does not maintain the balance that was the foundation for the Northwest Forest Plan. The survey and manage measures were part of a comprehensive program to maintain a balance between late-successional/old-growth forest habitats and forest products, yet the proposed measures place a priority on the survey and manage species and reduce the amount of timber production available from the forests. We recommend that a new alternative be incorporated that reexamines all land set asides to identify additional lands that can be restored to the matrix to offset the survey and manage impacts.

BOARD OF COUNTY COMMISSIONERS
OF DOUGLAS COUNTY, OREGON


Michael J. Winters, Chair


Doug Robertson, Commissioner


Joyce Morgan, Commissioner

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MAR 2 2000

COMMENTS OF THE
BOARD OF COMMISSIONERS
DOUGLAS COUNTY, OREGON

on the

DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
FOR AMENDMENT TO THE SURVEY AND MANAGE, PROTECTION BUFFER, AND
OTHER MITIGATING MEASURES STANDARDS AND GUIDELINES

1. At the April 2, 1993, Forest Conference, President Clinton set forth a program that was designed to achieve a balanced and comprehensive policy that recognized the importance of the forest to the local economy and the ecological importance of old-growth forests. A key foundation of the Northwest Forest Plan was to provide sustainable timber harvests, healthy old-growth ecosystems, and adequate populations of fish, wildlife, and plants. It was to achieve a balance wherein no one aspect had a higher priority over the other. Unfortunately, by increasing the amount of set asides and reducing the timber harvest for one aspect of the plan at the expense of the social and economic outputs, the "balance" is not being maintained, nor is the plan consistent with the purposes for which the forests and O & C lands were set aside.

When the Northwest Forest Plan was adopted, the sustainable timber harvest level was set at 958 million board feet plus an additional 10% volume estimated in cull and submerchantable material for a total of 1.1 billion board feet (DSEIS p. 291).¹ This volume was a significant reduction from the 1980-89 harvest of 4.524 billion board feet and the 1990-92 harvest of 2.389 billion board feet (FSEIS 3&4-265). Further, the plan reduced the lands available for timber management by placing 77% of the forest in reserves for which no scheduled harvest was to occur. Of the 24 million acres of federal land within the planning area, timber harvest was only allowed on the 16% designated as matrix lands, the 6% in adaptive management areas, or on the 1% set aside into managed late-successional areas. The "balance" resulted in 77% of the forest being off limits to scheduled timber harvests.

¹. Since the Northwest Plan was adopted, six of the forests revised their PSQ's (including the Umpqua) to reflect the underestimate of the extent of riparian reserves (and other minor factors). This revision resulted in the PSQ dropping from the 958 MMBF to 811 MMBF (not counting the 10% cull) (DSEIS p. 291).

In addition to these limitations, the Northwest Forest Plan further limited the lands available for harvest by adopting the survey and manage protocol for all land-disturbing activities within the 23% available for forest harvest. Under the survey and manage protocol, all sites with certain rare or isolated old growth and late successional species were to be managed to avoid impacting the species.

An underlying assumption of the Northwest Forest Plan was that the impacts of the survey and manage requirement would be less than 6 MMBF (DSEIS p. 294), and this number was the basis upon which the "balance" of 1.1 billion PSQ was developed. With the modifications proposed in the DSEIS, the preferred alternative would drop the "balance" PSQ of the Northwest Forest Plan from the 1.1 billion down to 695 MMBF (as compared to the 4,524 MMBF harvested in 1980-1989). While implementation of the survey and manage protocols has resulted in a greater impact than projected at the time the Northwest Forest Plan was adopted, the proposed alternative does not seek to reestablish the "balance" but reduces the harvest further. Rather than simply reduce the harvest level further and ignore the social and economic aspects of the "balance," we recommend that the entire plan be reevaluated with greater attention being given to maintaining the social and economic aspects of the "balance." Among the options to reestablish the balance is to re-examine the various buffers and set asides to find additional land for timber production. For example, reducing the 200 foot buffers on each side of Class IV streams would free up substantial amounts of volume and in turn help restore the "balance."

2. The DSEIS states that the purpose of the survey and manage program is to assure viability of species closely associated with late-successional or old-growth forests. By selectively targeting late-successional or old-growth associated species yet only surveying for them in lands that do not have a high incidence of these habitat features, the surveys provide little assurance that species viability is being maintained or even verification that there is a risk to persistence.

While the survey and manage species are selected in part based on the assumption that the reserve system and other standards and guidelines do not provide a reasonable assurance of species persistence, this is simply an unfounded assumption until field surveys in the reserve system provide scientific verification. Due to the impacts of the survey and manage set asides on the social and economic values of the Northwest Forest Plan, we recommend that a priority be placed on surveying all of the reserves to verify the assumption that neither the reserves nor the standards and guidelines provide the reasonable assurance of species persistence.

3. We note that the purpose of the survey and manage requirement was to assure stable, well-distributed populations of rare and isolated late-successional and old-growth forest related species. Notwithstanding this goal, the strategy to achieve it is more onerous than necessary. As a result of the failure to survey for these species in the majority of their habitat - the congressionally and administratively reserved lands - the survey and manage protocol does not provide a scientifically sound method for determining whether the populations are in fact rare or isolated. While landscape level "strategic surveys" have the potential to address this issue, it is unclear whether they will include the reserves and be conducted in a timely manner. We recommend that the final decision require surveys of the set aside areas within a specific time period.

4. While the Record of Decision for the SEIS will not invalidate existing Survey Protocols, we note that several of these protocols expire by their provisions. We suggest to allow a smooth transition that all protocols in place be extended until revised pursuant to the final SEIS.

5. On page 34 of the DSEIS is a reference that the alternatives do not provide every species with a defined minimum level of assurance of persistence since doing so would incur "undue impacts to other objectives of the Plan." To provide for meaningful review and evaluation of the plan, we suggest that these undue impacts be clearly stated in the ROD.

6. Under the section entitled "Concern for Persistence," one of the factors indicating there is little or no concern for persistence is a "high proportion of sites and habitat in reserve land-use allocations." In the absence of surveys in the reserve land use allocations, this would be a difficult factor to satisfy. Since this is a critical factor, we suggest that the reserve sites be surveyed.

7. Furthermore, the criteria set forth in paragraph 6 above erroneously assumes the only way to satisfy persistence of the various species is to set aside additional lands. We suggest it would be more appropriate to examine essential habitat features and manage for them rather than simply rely on reserves.

8. We note the criteria for assigning a species to the "rare" category, is limited to the number of sites or habitat on federal lands. We recommend that this criteria be expanded to include a criteria that examines its full range and habitat covering all land ownerships.

9. Under the proposed alternative the estimated cost of the survey and manage program is \$27.6 Million as compared to the no-action alternative of \$132 Million. While the preferred alternative represents a significant cost savings, this sum will most likely need to be appropriated dollars or otherwise take funds away from other programs. We suggest further discussion on the impact of this cost to other forest programs be fully discussed in the FEIS.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION 10
 1200 Sixth Avenue
 Seattle, WA 98101

52441

March 3, 1999

Reply To
 Attn Of: ECO-088

Ref# 98-064-AFS

Survey and Manage SEIS
 Content Analysis Enterprise Team
 Attn: USDA Forest Service _CAET
 P.O. Box 221090
 Salt Lake City, UT 84122

RE: DSEIS For Amendment to the Survey and Manage, Protection Buffer, and Other Mitigating Measures Standards and Guidelines of the Northwest Forest Plan

The Environmental Protection Agency (EPA) has reviewed the Draft Supplemental Environmental Impact Statement (DSEIS) for the **Survey and Manage Strategy for National Forests and Bureau of Land Management Districts within the Range of the Northern Spotted Owl**. Our review is pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act.

The Forest Service and Bureau of Land Management are proposing to make changes in two of the mitigation measures first adopted in the Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl (Northwest Forest Plan). These changes affect the Survey and Manage, Protection Buffer, and Grazing species provisions and are based on new information that has been collected in the four years since implementation of the Northwest Forest Plan. The proposed action would merge Protection Buffer and Grazing species into the protective measures provided under the Survey and Manage provisions established under the Northwest Forest Plan. The proposed action may include the initial changes to species' categorization which would be made under the Survey and Manage mitigation measure, such as moving a species from one Component to another.

Three action alternatives are evaluated in detail, in addition to the No Action alternative. All action alternatives would merge Protection Buffer and Grazing species into Survey and Manage provisions with placement of each species in only one category. Categories are based upon species rarity (rare or uncommon), practicability of pre-disturbance surveys, and the amount of information known about the species. Alternatives include No Action, Alternative 1 (Preferred Alternative) - redefine categories based on species characteristics, Alternative 2 - remove or reassign uncommon species within 5 Years, and Alternative 3 - add equivalent-effort surveys and 250-meter rare site buffers.

We commend the Forest Service and Bureau of Land Management for their effort to ensure that the Survey and Manage provisions are clear and effective. We agree that the proposed

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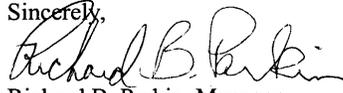
framework eliminates confusion, clarifies management recommendations, and helps focus limited resources. Of note, is the goal to correctly categorize each species to ensure the appropriate management direction is used in maximizing the sustainability of that species. We specifically support finishing strategic surveys within 5 years especially for undetermined species, placement of protection for bats into standards and guidelines common to all land allocations, specific management recommendations written by taxa experts, and the refinement of the adaptive management plan to include a specific consistent process and criteria for making future changes and shifts of species between categories.

EPA advocates a watershed, multi-species/multi-habitat approach. We also support the commitment to adaptive management and an emphasis on working collaboratively with major stakeholders in protecting the diverse species and ecosystems present within the Northwest Forest Plan region. We urge application of a very conservative and cautious approach, especially for those species for which there is little scientific information.

Based upon our review and the detailed comments enclosed, we have rated the DSEIS as EC-2 (Environmental Concerns - Insufficient Information). This rating and a summary of our comments will be published in the *Federal Register*. A summary of the EPA rating system is enclosed for your reference. Our main concerns are species persistence, management directions, and the economic and the social implications of the proposed actions. These concerns are described in detail below.

We would like to thank you for the opportunity to comment on this draft. If you would like to discuss these issues, please contact Anna Maria Muñoz at (206) 553-0253.

Sincerely,



Richard B. Parkin, Manager
Geographic Implementation Unit.

Enclosure

cc: Laura Fuji, EPA R9
Bill Kirchner, REO

2441

Detailed Comments on the Survey and Manage DSEIS

Species Protection and Persistence

The proposed action will remove 64 species from the Survey and Manage Standards and Guidelines because these species do not meet the basic criteria for this protection. Of these 64 species, the DSEIS states that 14 species are at risk of not maintaining a stable, well-distributed population once they are removed (e.g., pp. xxx - xxxiv). In addition, some alternatives would not provide enough mitigation for some species to maintain or achieve a stable, well-distributed population (pg. xxx, Table S-3). The DSEIS states that these species could be placed under sensitive species programs or listed under the Endangered Species Act. We are concerned with this proposal because there is no specific commitment or assurance that these species will be placed under other protection programs. We urge the development of a category and management recommendations for these species which would provide them protection until they are formally placed under another protection program or new information demonstrates such protection is not needed. The final supplemental environmental impact statement (FSEIS) should also indicate whether species dropped from Survey and Manage provisions could later be reinstated into this more protective category, if this need is demonstrated.

Alternative 2 assumes that the 53 uncommon species are the most likely species to be removed from Survey and Manage and seeks to expedite that decision (pg. 55). Based upon strategic surveys for these species, they would be dropped from special protection, assigned to special status species programs or considered for listing under the Endangered Species Act (pg. 60). Again, it is unclear whether these species would be provided adequate protection prior to their placement under another protection program. The FSEIS should describe how these species would be protected once dropped from Survey and Manage provisions and prior to placement under another program. In addition, the FSEIS should describe the management actions that would be taken if strategic surveys demonstrate a negative population trend, even if that trend has not yet made the species rare. The relative risk of reducing a species resilience and ability to persist if it is removed from special protection or the Survey and Manage provisions should be discussed.

Management Direction

The DSEIS proposes to clarify how species will be managed based on whether they are rare or uncommon. All Action Alternatives will require the “management of all known sites” for those species that are considered to be rare. For uncommon species, some or all known sites will be managed. To ensure a clear understanding of management direction, we recommend the FSEIS provide a detailed description of what would occur as part of managing these sites. If management directions are already described in detail in other documents, the FSEIS should provide a short summary of the management measures and reference the detailed description. The FSEIS should also provide a more in-depth discussion related to the Strategic Surveys, detailing how these surveys will be conducted. We urge an aggressive research and survey program with development of survey protocols as soon as feasible.

2441

Although it is clear that specific management recommendations are being developed, it is not clear how soon this guidance will be available for the field. Since species and their critical habitat do not abide by ownership boundaries, we believe the environmental evaluation should consider private and State land when evaluating potential environmental benefits and effects of the proposed actions. The FSEIS should incorporate these non-federal lands in their analyses, including the cumulative effects section.

The FSEIS should describe how public input will be obtained during the development of Management Recommendations for the Survey and Manage species. During the development of these Recommendations, there may be exceptions to the requirement to manage all known sites (pg. 36). Provision is made for these exceptions to be reviewed by the Regional Ecosystem Office. However, it is not clear if, how, or when public input on these decisions will be sought.

Economical and Social Implications

The DSEIS does not adequately analyze how the current and future budgetary constraints will affect the implementation of the proposed Survey and Manage strategy. The DSEIS states that Alternative 1 (the preferred alternative) would result in a 350% increase in cost of the Survey and Manage program (pg. 281). It goes on to state the appropriations have been declining. Therefore, the FSEIS should describe how the increased costs and inadequate budget to support implementation will be addressed now and in the future. The FSEIS should specifically describe the potential funding sources for the Regional Ecosystem Office (REO), panel of experts, survey protocols, and strategic survey plans. When looking at long-term implementation, the FSEIS should consider and address how future decisions would be made if the REO is no longer in place. We also recommend describing funding priorities for implementation of the Survey and Manage Standards and Guidelines in the advent that sufficient appropriations and funds are not provided.

The FSEIS should include a discussion of economic and social implications of the preferred alternative and the placing of specific species in specific categories. For example, would Alternative 3 have significant adverse impacts on timber receipts due to the increase in buffer zone acreage? The DSEIS should analyze and discuss how the alternatives will affect the current operations of the BLM and USFS. These operations should include timber, prescribed burning, treatment of insect infestations, and any other programs that may be affected by implementation of the Survey and Manage Standards and Guidelines.

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**U.S. Environmental Protection Agency Rating System for
Draft Environmental Impact Statements
Definitions and Follow-Up Action***

Environmental Impact of the Action

LO - - Lack of Objections

The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - - Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

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Fish, Wildlife & Forest

002

Pie Kupillas - Executive Board Minutes - January 24, 2000

Page 3

SEIS

Survey and Manage

Jackson County land base is over 50 federal forests. Our county is the second largest recipient of O&C funding. The survey and manage, protection buffers and other mitigation in the Standards and guidelines cause our county grave concern.

First we believe it does not allow implementation of the O&C Act.

Second the provisions are not based on scientific findings that conclude there is a legitimate reason for Survey and Manage

Third we do not believe enough money is budgeted to implement. The Medford BLM spent \$2.5 million or 5 \$M in 1999. The entire BLM is budgeting \$4 million for 2000. The Medford BLM is requesting \$3 million. There are serious budget shortfalls for management and this will further exacerbate the problem.

The DEIS is seriously flawed in that it does not meet the Social and Economic requirements as outlined by the President in 1993. It does not provide balance between social, economic and environmental

These are my comments

Pie Kupillas
Jackson County Commissioner
March 3, 2000

MAR-06-2000 MON 08:07 AM D
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FAX NO. 4063293021
ODA PLANT DIV.

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Oregon

John A. Kitzhaber, M.D., Governor

1236
Department of Agriculture
635 Capitol Street NE
Salem, OR 97301-2532



3 March, 2000

Survey and Manage SEIS
Content Analysis Enterprise Team
Attn: USDA Forest Service - CAET
P.O. Box 221090
Salt Lake City, UT 84122

Thank you for the opportunity to comment on the draft Supplemental Environmental Impact Statement For Amendment to the Survey & Manage, Protection Buffer, and Other Mitigating Measures Standards & Guidelines (SEIS). We were very impressed with the thoroughness of the document and recognize its importance to the persistence of uncommon and rare species in old growth forest habitat. Please remember that the Oregon Department of Agriculture (ODA) is a state regulatory agency. Thus, our comments stem from ODA-Plant Division's mission to protect Oregon's natural resources and agricultural and horticultural industries from exotic pests and diseases.

As you know, three alternative amendments to the Northwest Forest Plan (Plan) are presented in the draft SEIS, each with varying levels of protection for rare & uncommon species. Alternative 1 defines more clearly the species that are to be managed and provides approximately the same level of protection for those species as currently exists in the Plan. Alternative 2 assumes that future surveys will show that uncommon species are, in fact, common and will be managed as such. Alternative 3 requires fairly extensive surveys and management for both rare and uncommon species. For all of the alternatives, pre-disturbance surveys must be done in areas with rare and, sometimes, uncommon species (Alternatives 1 and 3, only) prior to the habitat-disturbing activity. Nowhere in the text is it clearly stated what options are available if a rare or uncommon species is found during a pre-disturbance survey.

This may create a dilemma for regulatory agencies. As stated above, one of our primary missions is to protect Oregon's natural resources from exotic pests and diseases. Our primary weapon against newly introduced pests or pathogens is survey and eradication. Once our surveys have determined the extent of a new infection center or infestation, we evaluate our options. If eradication is feasible, we eradicate. The draft SEIS does not address this issue. If the infection center or infestation is in an old growth forest, what must we do in order to use our best tool? Will we be required to perform pre-disturbance surveys for uncommon and rare species before the eradication project can go forward? If a rare or uncommon species is found, will we even be able to use that tool? On p. 299, it specifically states that "...state and local land-use plans, policies, and controls have little application." This certainly suggests that on federal lands our best tool against exotic pests and diseases is not an option. Unfortunately, most of the text was missing on that page, so we were unable to determine if our concerns were addressed later in that section.

Obviously we are as interested as the US Forest Service in maintaining the health of our old-growth forests, including the rare and uncommon species

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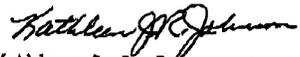
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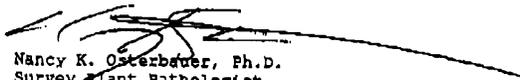
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dependent upon that habitat. We hope there is an option available that allows us to eradicate exotic pests and diseases while still allowing us to protect all of our native species. Because the issue of exotic pests and diseases and other exotic organisms (e.g. noxious weeds) is not addressed within the draft SEIS, we do not know if such an option exists. We strongly encourage you to address the issue of exotic organisms in the draft SEIS or provide a reference to other federal documents that address this issue.

Again, thank you for the opportunity to comment on the draft SEIS. If you have any questions, please contact us.

Sincerely,


Kathleen J. R. Johnson, Ph.D.
Supervisor, Plant Pest & Disease
Programs


Nancy K. Osterbauer, Ph.D.
Survey Plant Pathologist

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MAR 6 2000



Point No Point Treaty Council

Port Gamble S'Klallam • Lower Elwha S'Klallam • Jamestown S'Klallam • Skokomish

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TO: Survey and Manage SEIS Content Analysis Enterprise Team
Attn: USDA Forest Service – CAET
P.O. Box 221090
Salt Lake City, UT 84122

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FEB 25 2000

FROM: Sally Nickelson,
Wildlife Program Coordinator
Point No Point Treaty Council – representing the Skokomish, Port Gamble
S'Klallam, Jamestown S'Klallam and Elwha S'Klallam Tribes

DATE: February 22, 2000

RE: Comments on the Draft SEIS for Amendment to the survey and damage,
protection buffer and other mitigation measures standards and guidelines.

Thank you for the opportunity to comment on the draft SEIS. I represent the Point No Point Treaty Tribes on the Olympic Peninsula in Washington State, which consist of the Skokomish, Port Gamble S'Klallam, Jamestown S'Klallam and Elwha S'Klallam Tribes. The Forest Service ownership on the Olympic Peninsula is within the ceded or traditional use areas for these four tribes, and they have treaty-secured hunting and gathering rights on these lands.

We agree that it is prudent to amend portions of the NW Forest Plan to improve efficiency and consistency in applying mitigation measures. It makes sense to consolidate Protection Buffer and Protect From Grazing measures within Survey and Manage to eliminate redundancies and conflicts. We also support defining a process for adding and deleting species. The Plan needs some flexibility to deal with new information, changes in populations and unforeseen circumstances.

The Tribes want to ensure that all native species are adequately protected in perpetuity. Hundreds of species of plants were traditionally gathered for food, medicine or ceremonial purposes, and most animal species were hunted. On the Olympic Peninsula, federal ownership contains virtually the only remaining old growth habitat. As a result, we are concerned that Alternatives 1&2 would increase the amount of late-successional forest available for harvest. While we understand that much of the analysis for species persistence was done on a broad spatial scale, tribal needs usually occur at the local scale. Locally occurring species can have great cultural significance. Allowing local extirpation of species as long as the populations persist in other areas may not be acceptable to the tribes. Unfortunately, analysis on a forest level was not done in the SEIS, so we could not evaluate the effect that the alternatives might have on the Point No Point Tribes' local treaty resources.

Under all three action alternatives, management recommendations will be written before local sites may be afforded less protection than currently offered. Once they are written, under all action Alternatives, some sites may no longer require protection as long as the species would

persist at a larger scale. Our tribes propose that the federal agencies commit to notifying local tribes when such proposals to no longer protect local sites are made. If the species are of cultural importance to the local tribe and the tribe objects to the loss of specific protection, the agencies would then commit to continuing the local site protection.

We believe that Alternative 2 entails far too much risk to numerous species, and thus treaty resources, and do not support this alternative. We urge the agencies not to consider this alternative.

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Because Alternative #1 is the preferred alternative, below are comments specific to it.

FEB. 25 2000

Snags

The proposal in Alternative 1 (pp.48) that snags over 20 inches dbh should only be retained in numbers sufficient to meet 100% of potential population levels of the four woodpecker species, rather than retaining all large snags, is of concern. The number of snags needed to provide 100% of population needs is based on a model developed prior to 1985 and uses several assumptions. If the model is incorrect and lists lower numbers of snags than are actually required, the risk to the species will be too high. The tribes support the more conservative current approach of retaining all large snags.

Bats

We agree with the portion of the proposed changes in the standard and guideline for additional protection for bats that would not require disturbance of the bats. However, the proposed language, while mandating protection of occupied sites, does not specifically require surveys of all potential sites. Is it assumed that all surveys of potential sites have already been completed?

Adaptive Management

Treaty tribes have the right and responsibility to co-manage natural resources along with the federal and state governments. In light of this management responsibility, our tribes believe that tribal representatives should be present on the interagency group that evaluates new information and determines whether species should be added or deleted from the survey/manage list.

Great Gray Owls

We are concerned that, while Alternative 1 does require continued protection around all owl nests until management recommendations are developed, in the future protection for some sites could be lessened or withdrawn. With only 72 sites currently identified, this species may continue to be at risk. We propose that minimum standards be delineated, and it be stated that all current and future owl sites will be protected.

Del Norte's Salamander

The rationale behind assigning Del Norte's salamander to category 1D rather than 1C is unclear. No justification is given for discontinuing pre-disturbance surveys. Because this species has high site fidelity, low dispersal, narrow habitat requirements, and patchy distribution, its ability to recolonize areas once extirpated is likely low. As such, it is important to detect and protect all occupied sites. We recommend assigning this species to 1C and continuing pre-disturbance

surveys so all known sites can be managed until high priority sites are identified and management recommendations developed and approved.

Northern Spotted Owl

We are concerned, that while the owl population decline has slowed, it continues to decline, in spite of drastically reduced habitat decline. In particular, the population on the Olympic Peninsula continues to decline at a significant rate, though old growth harvest on federal land has been virtually non-existent since the adoption of the Forest Plan. As a result, we wonder whether the original analysis is adequate for the Olympic Peninsula. If any old growth harvest on matrix land on the Olympic Peninsula would be allowed under the new survey and manage guidelines, consideration should be considered given to delaying the harvest until the owl populations here have stabilized.

Late-Successional Mammals

We question the statement that small habitat patches provide little contribution to wide-ranging species such as elk. Our research on the Olympic Peninsula has shown that small old growth patches within a matrix of younger stands provide very important and heavily used habitat for elk. Elk are a culturally vital species for the tribes, and it is imperative for tribes that local herds are maintained in perpetuity. The loss of protection of 12,000 acres of late-successional habitat could contribute to a decline in local populations, not only of elk, but other culturally important species. In addition, some of these old growth patches may occur in areas of spiritual significance, and the maintenance of old growth is important to current spiritual practices. As stated above, we propose that federal agencies commit to notifying local tribes when proposals to harvest local sites are made, and if the tribe objects, the agencies would then commit to continuing the local site protection.

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FEB 25 2000

REGIONAL ECOSYSTEM OFFICE

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5767

February 29, 2000

Survey and Manage Supplemental Environmental
Impact Statement Content Analysis Enterprise Team
ATTN: USDA FS – CAET
P.O. Box 221090
Salt Lake City, UT 84122

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MAR 01 2000

Regional Interagency Executive Committee
Anne Badgley, U.S. Fish & Wildlife Service
Roger Blair, Western Ecology Division, Environmental Protection Agency
John D. Buffington, USGS Biological Resources Division
Mike Collopy, USGS Biological Resources Division
Col. Randall J. Butler, U.S. Army Corps of Engineers
Ken Feigner, Environmental Protection Agency
Harv Forsgren, Forest Service
Nancy Graybeal, Forest Service
Bob Graham, Natural Resources Conservation Service
Thomas Mills, Pacific Northwest Station, Forest Service
Stan M. Speaks, Bureau of Indian Affairs
William Stelle, Jr., National Marine Fisheries Service
John Volkman, National Marine Fisheries Service
William C. Walters, National Park Service
Jim Shevock, National Park Service
Elaine Y. Zielinski, Bureau of Land Management
California Federal Executives
Brad Powell, Forest Service
Roberta Moltzen, Forest Service
Michael J. Spear, U.S. Fish and Wildlife Service
John Engbring, U.S. Fish and Wildlife Service
Alfred Wright, Bureau of Land Management
Paul Roush, Bureau of Land Management

Subject: Survey and Manage Draft Supplemental Environmental Impact Statement (DSEIS)

The purpose of this memo is to formally transmit the comments prepared by the Intergovernmental Advisory Committee (IAC) subcommittee regarding the Survey and Manage DSEIS. The non-federal members of the IAC reviewed the work of the subcommittee at the February 3 IAC meeting and agreed to have these comments forwarded on behalf of the non-federal IAC members to the Regional Interagency Executive Committee and the Content Analysis Enterprise Team.

Sincerely,



CURTIS A. LOOP
Acting Executive Director

Enclosure
cc: Non-Federal IAC Members, REO Representatives

1499/ly

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**Final Comments of the IAC Non-Federal Subcommittee on the
Survey and Manage Draft Supplemental Environmental Impact Statement
February 23, 2000**

At the request of the Regional Interagency Executive Committee (RIEC), a subcommittee of the Intergovernmental Advisory Committee (IAC) reviewed the Survey and Manage Draft Supplemental Environmental Impact Statement (DSEIS) on January 26th. A preliminary report of the subcommittee was presented and discussed at the February 3, 2000 meeting of the IAC. This report presents the final comments of a subcommittee comprised of the non-federal members of the IAC resulting from the deliberations of the IAC and comments received through February 10th.

General Comments - Process

Distribution and handling of the DSEIS illustrates continuing problems in involving the IAC in Northwest Forest Plan (NFP) deliberations.

- The process for consideration of IAC input appears to be limited to public comments. The IAC should have a substantive role in helping to craft a recommendation to be presented to the RIEC.
- The document was not distributed to the IAC even though it was available in December.
- Some Provincial Advisory Committees (PACs) were given briefings and others were not. Likewise, some local governments were briefed and others were not. Briefing meetings were held with PACs and are being arranged without notifying IAC representatives. This causes confusion as to lines of communication between PACs, PIECs, the IAC, and RIEC. The Regional Ecosystem Office (REO) needs to implement a process to ensure that the IAC is kept informed of activities occurring within their respective areas of responsibility.
- The RCERT was established to deal with NFP social/economic issues. It appears that no one on the RCERT was asked for input on the DSEIS. RCERT should be involved, particularly when addressing socio-economic impacts of the proposed alternatives.
- The tribes were not involved or consulted during the development of the DSEIS.
- The distribution list for the document is incomplete and inconsistent (e.g., local governments).

Fundamental Issue:

None of the alternatives appears to represent a viable approach to fulfilling program obligations for Survey and Manage (S&M), given limitations of available budgets. The DSEIS fails to address the fundamental issue of what to do with S&M requirements

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given the limitations of federal funding available to support the activity. The costs of implementing any of the alternatives greatly exceed the \$8 million currently available for S&M. The DSEIS should explicitly discuss: (a) implications of insufficient funding in light of the new forest planning regulations under consideration which suggest that activities will not be implemented when funding is inadequate; and (b) consequences for other aspects of FS/BLM operations if the S&M alternatives were to be implemented under current budgetary limitations.

The fundamental policy question that needs to be addressed is not which of the alternatives should be supported, but rather *"Do we need a fundamentally different approach to Survey and Manage?"*

- The subcommittee has a general concern that researchers may be approaching S&M from an academic perspective, engineering the S&M approach without consideration for pragmatic and practical constraints. There is a concern that checks and balances are lacking and that policy oversight is insufficient to guide the development of alternatives. There should be some constraints on design of alternatives considering the costs of implementation, the time to implement the program and impacts to other program areas. Are there other strategies to approach the objective of species persistence? Can more efficient survey designs be developed?

Persistence as a goal for S&M

The objective of the S&M activity is intended as a mitigation measure that is intended to provide reasonable assurances of persistence for individual species. Yet, the DSEIS fails to provide quantitative standards to guide interpretation and evaluation of species persistence, particularly with respect to the concept of ensuring that species are "well distributed" across the NFP landscape.

- Pre-disturbance surveys account for from 75%-99% of the projected costs, yet these activities occur on only about 15% of the old growth landscape covered by the NFP. It is not at all clear that any conclusions can be drawn about species persistence under the NFP from pre-disturbance surveys – what distinguishes the matrix lands from others covered by the NFP? The DSEIS fails to explain how S&M strategies that devote the vast majority of available resources to pre-disturbance surveys on old growth matrix lands addresses objectives for species persistence across the landscape of land allocations and reserves established under the NFP.
- The stated management objective of S&M for species persistence does not adequately recognize obligations to tribes with respect to their rights and resources used by their communities. Tribal rights are mentioned in the Environmental Justice section, but the DSEIS needs to improve its treatment of the need to protect resources of importance to tribal communities as part of this program. A criterion should be added to the adaptive management process that requires consultation with the tribes and effects to tribal resources before a

S767

species is removed.

- The DSEIS needs to do a better job of analyzing relative risks to species persistence by alternative. The summaries do not facilitate ready evaluation of what the alternatives accomplish with respect to the risks to individual species.
- The DSEIS gives uneven treatment of impacts on risk to persistence of individual species. Some sections are written more coherently than others. The format for the red tree vole and salamander sections was easier to track than other portions of the effects analysis such as the vascular plants and mollusks.

Incompatibility of Ecosystem Management and Protection of Individual Species

The NFP is ecosystem-based while the S&M activities are species-based. As noted in the DSEIS, in many respects, these two approaches are incompatible. The discussion of alternatives presented in the DSEIS does not adequately address interrelationships between S&M and activities that are intended to improve ecosystem health. All alternatives are acknowledged to potentially delay or eliminate some of these activities, including subsoiling, fuels treatments, and restoration of upland watershed and riparian areas. The DSEIS asserts that such conflicts are inconsequential and would be reduced or resolved through adaptive management, but no supportive analyses are presented. Consequently, the DSEIS fails to reconcile potential conflicts between S&M and other activities anticipated under the NFPs standards and guidelines.

DSEIS Presentation of Alternatives

- The DSEIS attempts to bring all the pieces of S&M together in one document so that program costs, effects to species, impacts on PSQ, and socio-economic effects can be considered at the same time.
- The background section of the DSEIS should include a discussion of the relationship between recent litigation and the proposed action or purpose and need of the DSEIS.
- References to alternatives in the conclusion sections are not consistent with the text.
- The sole use of scientific names in appendices and tables makes the DSEIS inaccessible to the general public. Species should be identified by both scientific and common names to improve understanding.
- The appendices are helpful, but analysis of alternatives is inconsistent and muddled. Some "analyses" appear to be little more than statements of conclusions and lack adequate support as to their scientific basis.
- The description and discussion of alternatives are quite complex and involved. Treatment is uneven with some sections written more coherently than others. A

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consistent template for presenting information would facilitate comparison of alternatives.

- It is very difficult to track, compare, and evaluate conclusions and alternatives in the effects analysis in the DSEIS. The lack of clarity of the presentation of alternatives and effects analysis in the document impedes the ability of the public to understand differences between alternatives.

Specific examples of text or diagrams needing clarification:

- Page xxxix. The estimates of jobs supported by timber harvest and timber volumes for the No Action Alternative presented at the top of the page are inconsistent with Table S-3 in that they do not reflect a timber volume reduction for the 1st five years.
- Page 5: Relative Benefits of S&M alternatives to species, bar graph is misleading.
- Page 281: Figure 3&4-4c; white bars don't vary as much as they should. How can sale preparation costs be the same across the alternatives since probable sale quantities (PSQ) changes and some costs are relatively fixed?
- Page 285. The last paragraph contains the statement "Timber sale volumes foregone during the 5-year period would impact 6,570 jobs." The DSEIS does not explain the basis for this estimated impact. Since timber harvest may be delayed by the S&M activity because of fungi protocol surveys, what assumptions underlie the loss of 6,570 jobs?
- Page 287. How were survey and person hours required for S&M activity estimated? The costs in Table 3&4-9 should vary by assumptions regarding hourly rates. Why isn't a range of costs presented that reflects the ranges presented in Table 3&4-10? Instead, the DSEIS strangely appears to presume that the cost of S&M is fixed so that the number of FTPs varies depending upon hourly rates paid to field crews (Table 3&4-11). Is there an analysis that supports the implicit contention that the amount of field work required to conduct S&M activities or the work accomplished by S&M crews somehow varies by hourly rate?
- The criteria used to evaluate and compare alternatives are not presented. The basis for selection of Alternative 1 as the Preferred Alternative is not at all clear.
- The DSEIS does not provide adequate information on the effects of the S&M alternatives on two vitally important areas of ecosystem management, even though potential problems are acknowledged. S&M activities could interfere with the restoration of ecological functions in fire-associated forests in southern Oregon and northern California (see *Effects – Forest Ecosystems*). S&M requirements could also delay or eliminate some management activities that would benefit water, air, or soil resources (see *Effects – Aquatic Ecosystems*).

Adaptive Management

- The DSEIS devotes a substantial amount of effort toward changes of status of

S 767

individual species resulting from the application of categories and classification criteria under the proposed alternatives. However, this approach obscures the fundamental concept of adaptive management that underlies all alternatives.

- A general section on Adaptive Management should be incorporated into the DSEIS since this is the approach that is proposed to minimize the need for future SEIS's for S&M. Currently, each alternative contains a section on adaptive management. These sections are substantively identical except for categories and criteria.
- The concept of specifying criteria to change S&M requirements for individual species is an improvement from the current situation. However, reliance upon qualitative terms in those criteria does little to illuminate the contents of the "black box" of agency science and subjectivity. Vagueness and ambiguity will likely lead to continued uncertainty and spawn future litigation. This concern is heightened by the lack of a process for review/appeal of agency decisions as to changing the categorization of S&M species. Efforts should be undertaken to provide quantitative guidelines for criteria to minimize uncertainty as to intent.

Cumulative Effects

- The cumulative effects analysis (including all actions known or reasonably expected) is insufficient. The DSEIS does not clearly articulate the assumptions underlying the basis for the analysis. Areas of particular concern include: (a) activities on non-federal lands over the last five years have resulted in effects on species that were not factored into the original NFP baseline; (b) the failure to explicitly account for the exercise of tribally reserved rights; and (c) the failure to quantify take of listed species. The final EIS should consider changes to the landscape and environmental baseline such as Habitat Conservation Plans and activities on non-federal lands.

Socio-Economic Effects

- Information on PSQ and S&M costs is presented, but the DSEIS does not contain sufficient detail to support estimates of socio-economic impacts of proposed alternatives. No distributional information was presented in the DSEIS to enable affected communities to better understand the implications of the proposed alternatives. RCERT should have been consulted to obtain information for the analysis.

Criteria for identifying S&M species

- The utility of the second criterion for identifying an S&M species should be reviewed. This criterion relies on species occurrence being associated with old growth. However, much of the discussion within the DSEIS regarding removal of species centers on the observation that the species are not limited to old growth habitats. Just because a species is found in old-growth doesn't mean it is dependent on old-growth. If the intention of the S&M program is to protect species that are only found

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in old growth habitats, then the criteria should be changed to be Old-growth dependent.

Clarification of Implications for other Interests or Programs

- The DSEIS does not adequately address interrelationships between S&M and activities such as fire suppression or forest protection. For example, how does survey and manage affect fire suppression efforts or how does it affect the agencies ability to perform fuels reduction treatments or prescribed fire? It is unclear how survey and manage will affect emergency treatments for forest insects and disease. There is a concern that short-term management for S&M might preclude fuels management or other forest health treatments that have long-term ecosystem goals. For example, prescribed fire treatments may affect a survey and manage species that occurs on the site only because fire has been suppressed. The DSEIS should clearly state that S&M requirements will not preclude emergency activities such as fire suppression or forest protection.

SAN MIGUEL COUNTY
 BOARD OF COMMISSIONERS
 ART GOODTIMES

S246

Feb. 4, 2000

Chief Michael Dombeck
 U.S. Forest Service
 c/o Survey and Manage SEIS
 Content Analysis Enterprise Team
 Attn: USDA Forest Service-CAET
 P.O. Box 221090
 Salt Lake City, UT 84122

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FEB 17 2000

Chief Dombeck,

I am writing to comment on the Draft Supplemental Environmental Impact Statement for the Northwest Forest Plan's Survey and Manage Protocols. The alternatives analyzed are far too narrow. No alternative considers increased protection of ancient forests or the species that depend on them. For these reasons the Draft SEIS should be pulled until a "No logging old growth" Citizens Alternative is analyzed.

Logging ancient forests:

- ... destroys valuable wildlife habitat
- ... contributes to the decline of salmon populations
- ... pollutes public drinking water supplies
- ... devastates rural community economies
- ... increases the size and frequency of landslides and floods
- ... degrades the scenic beauty of the Northwest
- ... limits recreational opportunities
- ... costs taxpayers millions of dollars every year
- ... suppresses the development of more sustainable fiber alternatives

Which is exactly why the last remaining ancient forests on public lands should be immediately and permanently protected. If large corporations like Kinko's and Home Depot can phase out their dependence on old growth, why can't our federal government?

I strongly oppose the logging of old growth and am extremely disappointed that the Draft SEIS actually calls for an increase in the logging of old growth. We should set an example for the world by stopping the liquidation of the remaining ancient forests in the United States.

P.O. Box 1170 • Telluride, Colorado 81435 • (970) 728-3844 • FAX (970) 728-3718

S 246

Wasn't it you, sir, that said:

"What distinguishes a truly wealthy nation from one that merely generates wealth is the foresight and wisdom to leave behind a richer legacy than we inherited, to make short-term sacrifices to advance long-term gains, to proceed humbly and cautiously in managing our natural resource endowment."

I hope we can live up to that noble ideal in our management of the public lands.

Sincerely,



Art Goodtimes
president, Telluride Institute
vice-president, Western District, Colorado Counties, Inc.
member, Public Lands Steering Committee, CCI
member, Public Lands Steering Committee, National Association of Counties
boardmember, Club 20
boardmember, BLM Southwest Resource Advisory Council
boardmember, Painted Sky Resource Conservation and Development Council
senator-at-large, Western Colorado Congress



February 15, 2000

COUNTY OF SISKIYOU

Board of Supervisors

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S.307

Survey and Manage SEIS
Content Analysis Enterprise Team
Attn: USDA Forest Service - CAET
P.O. Box 221090
Salt Lake City, UT 84122

Dear Sir:

Subject: Comment on the Draft Supplemental Environmental Impact Statement (DSEIS)
Amending Survey and Manage Requirements

Thank you for the opportunity to comment on proposed changes to Survey and Management Requirements. We have the following comments on the proposed rule:

1. There needs to be another purpose for the DSEIS, and that is to identify the best approach to ecosystem management for all species and habitats. The Board would like this DSEIS process to include a review, with analysis and discussion, of "Alternative Approaches to Assessments of Species and Ecosystems", pp. II-99 to II-103, in the FEMAT Report. This section discussed the problems associated with managing forests on a species-by-species approach versus a landscape approach. We feel it is now time to address this issue again.
2. Alternative 1 is listed as the Preferred Alternative in part because it provides "a balance between species protection and a predictable and sustainable level of timber and other outputs." It is hard to accept this reasoning since a balance has not been provided by the Northwest Forest Plan (NWFP) yet.
3. Agencies have not been diligent in implementing the NWFP at all levels, pp. 4, DSEIS. The Administration has been absent in providing leadership in implementing their own plan. The "unprecedented level of interagency cooperation" has not been enough because cooperation before the NWFP was relatively non-existent and because budget and resources have not allowed for the degree of cooperation necessary to effectively implement the NWFP.
4. PP. 4, DSEIS, says that 1.6 bbf of timber were offered for sale over the two year period of FY 97 & 98. The annual sale level was projected at 1.1 bbf. The DSEIS is disingenuous.
5. PP. 6, DSEIS: We don't believe that objectives for managing Survey and Manage Species were or are being met. The Survey and Manage Standard and Guideline (S&G) was not imposed immediately as the NWFP was incorporated into the Land Management Plans of the National Forests involved. Time was allowed to prepare the survey protocols and management protocols necessary for proper, professional implementation of the S&G. Even though these protocols were not ready for all the species involved and budget and resources were not adequate to effectively implement the NWFP, the Administration allowed the S&G to come into effect anyway.

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JOAN T. SMITH
District 1

LA VADA ERICKSON
District 2

BILL HOY
District 3

JERRY GIARDINO
District 4

KAY M. BRYAN
District 5

FEB 18 2000

CAET-USDA Attention: Planning Rule
Page 2 of 2
February 15, 2000

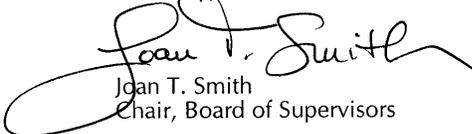
3307

6. The DSEIS attempts to provide a rationale for management for viable populations by using a persistence approach. Management for populations will require similar efforts that were made for the Northern Spotted Owl. The resources needed to obtain the necessary information are not available and will likely never be. The FEMAT or appropriate group of scientists needs to be convened to resolve this issue. There needs to be enough time to implement necessary ecosystem management activities on the ground to substantially reduce the risk of catastrophic loss of valuable resources in the forests to a more natural level.
7. Protocols for the management of species are not included. Additional train-wrecks will occur from not having these protocols in place.
8. There is a question regarding the commitment of the Administration to provide the necessary leadership at this point in time to put Survey and Manage and the NWFP back on track such that it will survive into the next Administration.
9. There is not a reasonable range of alternatives. Without Management Protocols the region is headed for more delays and problems. An alternative that would delay the use of the Survey and Manage S&G until adequate information is available should be included.

It is past time to assure effective implementation of the President's Plan; the balance promised in the plan has not been attained. While the Plan is a "100 year Plan", time is of the essence for the health of our forest ecosystems and our people. The risk to the overall health of the Forest from catastrophic loss is increasing substantially while resource outputs, especially those affecting the health of the economies of our forest resource dependent communities, have been substantially reduced. There have been substantial social costs; school enrollment has declined markedly as people move away to other jobs. Obviously, the President's plan has not and is not being implemented effectively. Our Klamath PAC representative has reported a similar conclusion.

Thank you for the opportunity to comment on your proposed rule.

Sincerely,



Joan T. Smith
Chair, Board of Supervisors

JWD/lrf

cc. Senator Dianne Feinstein
Senator Barbara Boxer
Congressman Wally Herger

JOAN T. SMITH
District 1

LA VADA ERICKSON
District 2

BILL HOY
District 3

JERRY GIARDINO
District 4

KAY M. BRYAN
District 5

G:\1NRS\FOREST\SURVEY AND MANAGE.BOS.COMMENT.2.15.00.WPD

93.

Subject: Old Growth Logging
Sender: anderson16a / INTERNET (anderson_16a@leg.wa.gov)
Attached Date: 02/22/00 10:35
Priority: normal
Sensitivity: normal
Importance: normal

Part 1

FROM: anderson.de / INTERNET
CVT1=RFC-H22; DSV=anderson.de@leg.wa.gov;

TO: survey / wo. east-alc

Part 2

APPX MESSAGE HEADER

Part 3

To Whom It May Concern:

I am writing to voice my concerns against an old-growth logging amendment. The Forest Service and BLZ have proposed to the Northwest Forest Plan. I understand this amendment would:

short cut the requirements to survey for rare species which are associated with old growth forests;

increase the allowable cut by 15 and 1100 board feet per year;

open up an additional 30,000 acres of mature and ancient forest for logging and

ignore the need to thin young plantations and restore watersheds.

For all these reasons and more, I ask that you withdraw the "Survey and Manage Environmental Impact Statement" and issue a new EIS that finally stops logging old growth forests.

Reminder: Less than 10 percent of the timber in Oregon and Washington comes from federal land, and only about 2 percent of the total jobs in the region are in lumber and wood products.

Sincerely,

Representative Dave Anderson, Vice-Chair
House of Representatives Natural Resources Committee
Olympia, Washington 98504-6600

CAET RECEIVED

FEB 22 2000

RECEIVED

FEB 23 2000

SURVEY AND
MANAGE



THE CONFEDERATED TRIBES OF THE WARM SPRINGS RESERVATION OF OREGON

NATURAL RESOURCES DEPARTMENT
P.O. Box C, Warm Springs, Oregon 97761

March 3, 2000

Survey and Manage DSEIS
Content Analysis Enterprise Team
Attn.: USDA Forest Service - CAET
P.O. Box 221090
Salt Lake City, UT 84122

RE: Survey and Manage DSEIS

Dear Sirs:

The Confederated Tribes of the Warm Springs Reservation ("CTWSRO") met with Forest Service and BLM staff on February 29, 2000, to discuss the Survey and Manage DSEIS. We have not reviewed the document in detail, but would like you to consider the following comments in developing the FSEIS.

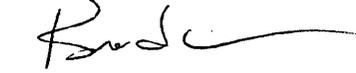
1. We are aware of a concern on the part of conservationists and several of Oregon's political representatives that the DSEIS does not present a full range of alternatives; specifically, that it does not consider an alternative that puts an end to harvest of old growth. It seems to us this alternative would be useful to consider given the impracticality of the "no action" alternative (i.e., survey according to the Northwest Forest Plan) and the stifling effect that pre-disturbance survey requirements have had and may continue to have on activities proposed for non-old growth sites. Would protecting remaining old growth be the most economical and effective way of carrying out the intent of the survey and manage requirements, which is to assure the persistence of old growth dependent species? It would certainly seem preferable to a system that attempts to protect old

growth-dependent species by requiring pre-disturbance surveys on non-old growth sites.

2. We have some concern that the plan will offer no protection to species not on the original list of 414 species. Does the preferred alternative contain a mechanism for adding species to the list?
3. We do support modifying the survey requirements to eliminate the need to survey for species that are clearly not old growth-dependent (provided sufficient habitat exists for those species).
4. The FSEIS should take into account the success or lack thereof of the Northwest Forest Plan in protecting the spotted owl. Again, we believe the intent of the preferred alternative should be to protect old growth-dependent species, not simply to make the survey requirement more manageable.

Thank you for taking these comments into consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Brad Nye", with a long horizontal flourish extending to the right.

Brad Nye

cc: Robert A. Brunoe, GM CTWSRO Natural Resources

Implementing the Northwest Forest Plan in the Willamette Province

WILLAMETTE PROVINCE ADVISORY COMMITTEE

P.O. Box 10607
Eugene, Oregon 97440

Julia Dougan, Eugene BLM
Acting Chair

Darrel Kenops, Willamette NF
Alternate Chair

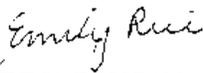
Date: February 28, 2000

Subject: Comments on Draft SEIS, Amendment to Survey and Manage Standards and Guidelines

To: Elaine Zielinski, Chair, Regional Interagency Executive Committee

Enclosed are the Willamette Province Advisory Committee's comments on the Draft SEIS for Amendment to the Survey and Manage Standards and Guidelines.

The comments have been sent to the Content Analysis Enterprise Team for the EIS Team for consideration in the Final SEIS. At the committee's request, we are also providing you a copy of the PAC's comments, for your consideration in final decision on the amended survey and manage direction. We hope the comments are useful in the decision making process and appreciate the opportunity to share the Willamette PAC's input on this very important Northwest Forest Plan issue.


for JULIA DOUGAN
Asst. District Manager, Eugene BLM
Acting Willamette Province Chair


DARREL KENOPS
Forest Supervisor, Willamette NF
Alternate Province Chair

enclosure

cc:
Harold Belisle, Regional Ecosystem Office

www.fs.fed.us/r6/willamette/mgmt/willamette_province

WILLAMETTE PROVINCE ADVISORY COMMITTEE

Willamette Province Advisory Committee
Comments on the Draft SEIS to Amend the Survey and Manage Direction
February 17, 2000

Items 1-5 are the consensus comments of the Willamette Province Advisory Committee on the Draft SEIS to amend the Survey and Manage direction in the Northwest Forest Plan. A subcommittee of the PAC originally drafted the comments that were subsequently reviewed by the full PAC. After a discussion of each point and proposed modifications, the PAC members were individually polled for their support of the comment. The following numbered comment categories, 1-5, and the accompanying bulleted statements were adopted by consensus.

1. Concern: Implementability of the pre-disturbance and strategic surveys as outlined in the preferred alternative.

- Do the agencies have the technical resources such as training programs and trainers and the correct mix of employee skills to carry out the ambitious survey program that is described in the preferred alternative?
- Will the Forest Service and BLM funding in future years be adequate to accomplish the Strategic Surveys and will the implementation of projects be adversely affected by the costs of the pre-disturbance surveys? The reality of the past few years is that the agencies budgets have been flat or declining. Even if total funding levels are maintained at current levels, implementation of the broad program of surveys called for will necessarily reduce funding available for other agency programs. This should be addressed.
- The EIS and/or the Record of Decision should identify and discuss what the contingency plans are in the event that funding in future years is not adequate to accomplish the survey program that is identified in the preferred alternative. It should also address whether there is a multiyear commitment to the strategic surveys.
- We recommend that the agencies seriously consider a more long range, proactive approach to managing all species, i.e. conservation plans designed to address categories or groups of species that would reduce the need for on-going specie by specie surveys.

2. Concern: Does the preferred alternative sufficiently 'fix' the Northwest Forest Plan so the standards and guidelines can be met and litigation loopholes are eliminated or at least, minimized?

- Some of the terminology used in the document is ambiguous and subject to further interpretation and litigation. Examples include, habitat disturbing/ground-disturbing (both terms appear in the document but are nowhere specifically defined); 'reasonable assurance' (refer to last bullet on page 57 that defines when persistence is not a concern); 'minimize inadvertent loss of undiscovered sites' (rationale for pre-disturbance surveys of rare species, page 42).

WILLAMETTE PROVINCE ADVISORY COMMITTEE

- Use of new terminology in the SDEIS that is different from FEMAT and the NWFP SEIS, but apparently is supposed to describe the same thing, i.e. *'high likelihood'* from FEMAT and NWFP versus *'reasonable assurance'* in the DSEIS, opens the door to confusion and possibly legal challenges.
- We recommend that the final SEIS be reviewed by the USDA Office of General Council and the DOI Solicitors Office prior to publication and final decision to help identify terms or phrases that are ambiguous or are not clearly defined.
- We also recommend that the agencies consider devising and including in the decision some mechanism other than judicial review to resolve differences over interpretations of the specific language and requirements in the EIS and ROD. A process that is refereed and has a defined resolution process.

3. Concern: There is a lack of information regarding the strategic surveys.

- We recommend that a strategic survey plan be part of the final document with details on how and when it will be implemented. The public should have the opportunity to review the specifics of the strategic survey plan and comment on it.
- On page 46 it states that surveys for the rare, undetermined species will be started within five years, on page 47 that surveys will be started within ten years for uncommon, undetermined species. The Northwest Forest Plan also called for similar surveys with similar timelines but implementation has been slow, sporadic and not met those timelines. What is different now that makes it more likely that the strategic surveys will occur within the proposed timelines.
- It is likely that strategic surveys will have to be prioritized because of funding and personnel limitations.
- We recommend that interim goals and objectives be established in the SEIS and ROD for these surveys to better track progress toward the five and ten year survey goals and objectives.

4. Comment: The proposed process and criteria for adding and removing species from the list (or changing the status) is a positive step in the Survey and Manage direction. It is a good example of the adaptive management process and we support its use and encourage similar processes.

5. Concern: Is the approach taken in the SDEIS at odds with the proposed National Forest Management Act regulations, e.g. using the concept of focal species versus individual species management?

- How would these apparent discrepancies in basic approach to land management and species conservation planning impact the National Forest Plan revisions?

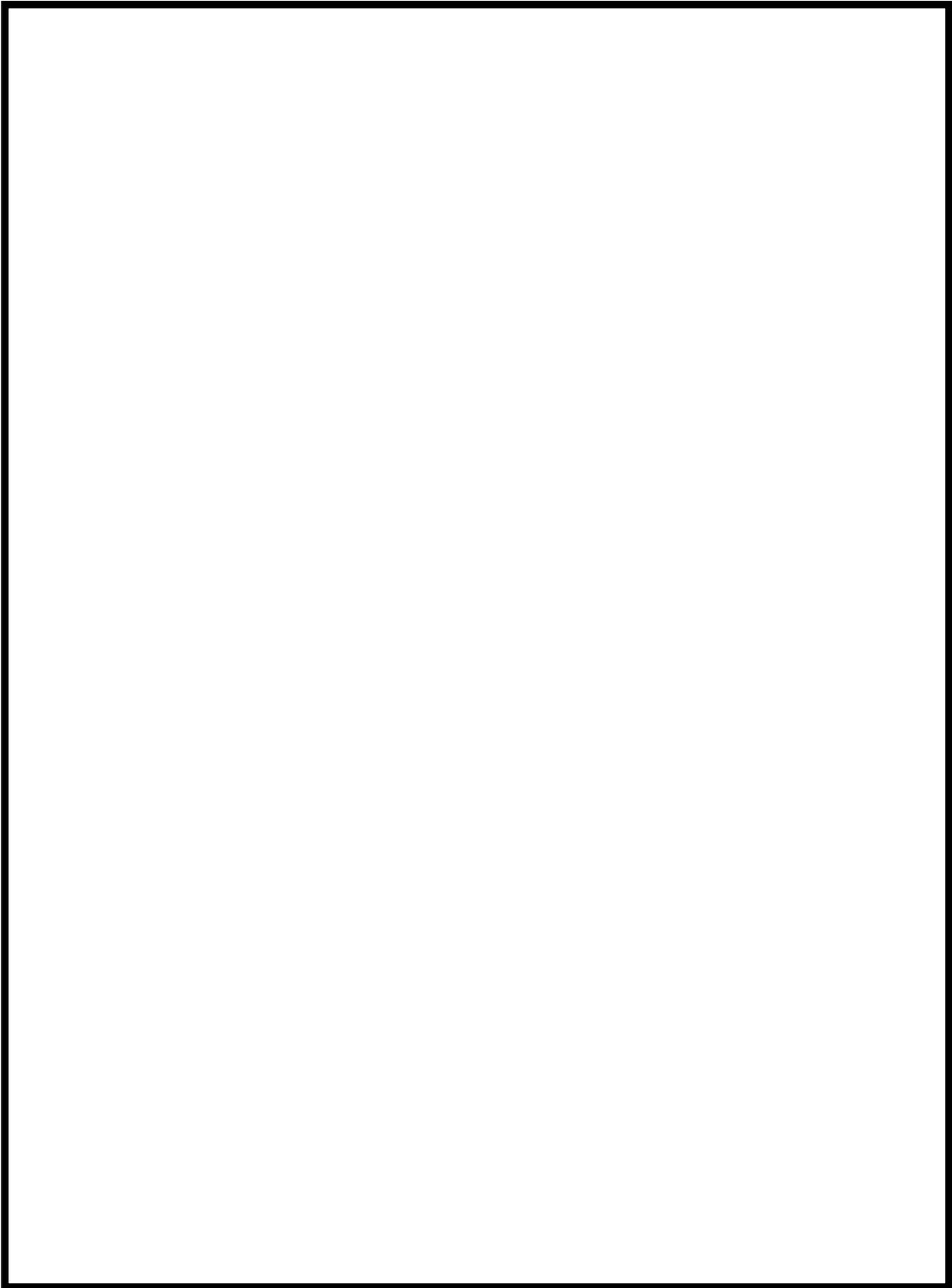
WILLAMETTE PROVINCE ADVISORY COMMITTEE

The PAC did not reach a consensus on the following comments. These comments are included here because they were in the draft comments brought forward by the subcommittee for the final PAC review and decision.

The DSEIS, Appendix E, criterion for developing the survey and manage lists includes the statement that species that “show association with late-successional and old-growth forest (may reach the highest abundance there, but not necessarily statistically so),” is one of the reasons why species have been included in survey and manage lists. The concern is that this criterion is open to personal biases and is not sound science.

Issue: Why wasn't an alternative that eliminated old growth harvest for five years while strategic surveys were completed, analyzed in detail?

- It would seem that pre-disturbance surveys would not be necessary if timber harvest were limited to younger stands, thus saving costs of pre-disturbance surveys and surveying for species that upon further information from the strategic surveys, may prove not to be rare.
- Consideration of this alternative would help defend charges that the range of alternatives was too narrow and failed to consider other reasonable alternatives.
- It is possible that this alternative could either be designed to delay harvest of old growth (generally defined as greater than 180 years and having specific stand structures) or as late-successional forests and old growth which would included generally all stands greater than 80 years old. In either case, the definition used would have to be clearly identified.
- Although the proposed alternative would be a delay or deferring harvest in old growth or late successional stands for five years, there is a concern that this could establish a precedent that would not allow the goals of the NWFP to be accomplished.



Appendix I

Response to Public Comments



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Appendix I

Response to Public Comments

Introduction

The public comment period for the Draft Supplemental Environmental Impact Statement for Amendment to the Survey and Manage, Protection Buffer, and Other Mitigation Measures Standards and Guidelines (Draft SEIS) began on December 4, 1999, and closed on March 3, 2000. Agencies, officials, and the public were invited to comment on the Draft SEIS.

During the 90-day public comment period, approximately 3,900 comments were received in the form of letters, postcards, facsimiles, and e-mails (collectively referred to as letters). Letters were received from a variety of interests including: scientists, individuals, organizations, businesses, Advisory Committees, Federal and State Agencies, Tribal governments, and elected officials.

All of the letters received during the public comment period were processed and the substantive comments were compiled into “comment statements.” Comment statements are summary statements that identify and describe specific issues or concerns identified in the letters. Unique concerns generated their own comment statement and similar concerns voiced in multiple letters were grouped into one comment statement. The processing of letters should not be thought of as a tally of votes. All letters are treated equally and are not given weight by number, organizational affiliation, or other status of the respondents. The comment statements were reviewed and the Agencies used information provided in the letters in the preparation of the Final SEIS.

One hundred seventy-one letters were received after the close of the comment period. These letters were reviewed and any substantive information they contained was considered in the preparation of the Final SEIS.

Several areas of controversy were raised in comment letters. These areas of controversy with a brief explanation of how they were addressed in the Final SEIS are listed below. This is not a complete summary of all public comments received.

- *A “no old-growth harvest” alternative should be considered.* This SEIS does not include a “no old-growth harvest” alternative because the Purpose and Need identified for this SEIS describes a need to amend some mitigation measures from the 1994 Northwest Forest Plan Final SEIS. The 1994 Final SEIS, which this SEIS supplements, did include an alternative that did not harvest late-successional and old-growth forests.
- *The annual species review process is based too much on professional judgment and too little on well-defined, numerical criteria.* The Agencies have determined that the proposed, more qualitative criteria coupled with professional judgment will result in more appropriate management for the species because the sometimes limited data available about individual species must be weighed in the context of species distribution, habitat quality and distribution, levels of survey effort, and so forth.
- *Individual arthropod species are excluded from future inclusion in Survey and Manage.* The concern for arthropods that led to their inclusion in Survey and Manage in 1994 was for the role of certain functional groups in high-fire frequency areas. Overlap in function, rapid speciation, narrow geographic distributions of individual species, and other factors indicate the group approach is most appropriate.

- *At least one mollusk species may actually be multiple species not yet described in published taxonomic literature.* This point is well detailed in the effects section for mollusks and will be considered by the decision-makers.
- *The Agencies' taxa specialists may not be sufficiently knowledgeable to describe effects to species in this SEIS.* The Agencies' taxa specialists that contributed to this SEIS are highly qualified, experienced personnel who have drawn from all currently available information about these species. The fact that the public comment period resulted in very little new information about species is testament to the thoroughness of the taxa specialists in gathering and incorporating relevant information.
- *The costs of implementing the alternatives exceed current budget levels.* The Final SEIS contains specific assumptions about funding. It is assumed that adequate funds will be available to implement the alternatives as described. A discussion of the implications of reduced funding has been added to Chapter 3&4. Since most of the costs are part of project preparation costs, the Agencies are expecting to apply the standards and guidelines as written.
- *Alternative 3 does not meet the balance of species protection and timber harvest described in the Northwest Forest Plan.* Providing species protection and providing resource outputs are two of the four issues identified in the Issues section of Chapter 2. The alternatives will be weighed against those issues by the decision-makers.

Organization of Appendix I

This appendix contains the comment statements and responses. After analyzing the comment statements as described above, the Interagency SEIS Team grouped the related topics to avoid duplication and, then, responded to the comments. The comments and responses are intended to be explanatory in nature; if there are any inadvertent contradictions between Appendix I and the text of the Final SEIS, the Final SEIS prevails.

Letters received during the comment period from federal agencies, state and local governments, American Indian tribes, and elected officials are reproduced and included in Appendix H.

Summary

1. Comment: The Draft SEIS should accurately display information in the summary.

Response: The Comparison of Effects section in Chapter 2 and the Summary have been rewritten to better reflect the source discussions in Chapter 3&4.

2. Comment: The summary of effects for several resource issues is inadequate.

Response: The summary of effects sections have been rewritten. The Summary and the Comparison of Effects section in Chapter 2 are intended to provide the reader with a brief statement of the conclusions of the analysis and management implications from those conclusions. Usually, in the interests of brevity and avoiding unnecessary redundancy, the summary does not include a detailed discussion of the analysis, the assumptions of that analysis, or the relationship of the environmental consequences to the affected environment. The reader is referred to the discussion of the applicable resource sections in Chapters 1, 2, and 3&4 for a detailed description of the standards and guidelines, the affected environment, the environmental consequences, and the supporting analysis for our conclusions.

Chapter 1

3. Comment: The statement in the Underlying Need section that “some fungi for which only a few sites are known do not require manage known sites” does not make sense.

Response: The statement has been clarified. It is a statement of a problem affecting several species in the No-Action Alternative. An objective of this SEIS is to clarify management direction that appears in error or does not seem to match the needs of the species. The action alternatives add “manage known sites” as direction for these species.

4. Comment: The Forest Service and BLM (the Agencies) should reduce the number of Survey and Manage species from that originally required by the Northwest Forest Plan.

Response: The Northwest Forest Plan Record of Decision (p. C-6) states species should be removed from Survey and Manage, or changed categories, when new information indicates their status is more secure than originally projected. The action alternatives propose to remove 72 species from Survey and Manage and related standards and guidelines in all or part of their range.

5. Comment: The Agencies should survey for species on other reserve lands to determine if those species need protection on Matrix lands.

Response: The key source of information that will indicate whether species are secure in reserves are strategic surveys. After 2 years experience with pre-disturbance surveys, and because of the clarification of species objectives that has resulted in doing the analysis for this SEIS, the potential benefit of completing strategic surveys is clear. There is a renewed emphasis on the part of the Agencies to complete strategic surveys covering all land allocations in a timely manner.

6. Comment: The Agencies should discuss the economic need for extraction of timber from National Forest System lands.

Response: The decision to harvest timber from federally managed lands is outside the scope of this SEIS. Probable Sale Quantity (PSQ) is displayed for the various alternatives only to show the likely effect of the different alternatives. The decision to harvest timber is made in site-specific, project-level decisions that implement the land and resource management plans of the administrative units. When developed, these plans considered many factors, including economic needs and the suitability of lands for timber harvest. The economic need for timber was fully discussed in the EISs which are supplemented by this document. The effects to PSQ displayed in this document are intended to show how the PSQ levels described in Forest and District Plans may be affected.

7. Comment: The Agencies should not try to fix the serious problems with Survey and Manage by fine-tuning.

Response: The overall approach of Survey and Manage appears, at this time, to continue to be a feasible mitigation measure for preserving the current distribution and stability of little known species (i.e., those which are potentially endemic and about which little is known). Because pre-disturbance surveys for many of the species have only been required since 1998, it would be premature to conclude there are such serious problems with the measure that it cannot be fixed. There certainly is a need to identify criteria for removing species, and to propose removal as intended in the original standards and guidelines. Seventy-two species are proposed for removal in all or part of their range. There is also a need to correct conflicting and confusing language as well as inefficiencies, indeed “fine tuning” the Survey and Manage and related standards and guidelines, so that the mitigation measures will function as intended.

8. Comment: Does the statement that no appeal or protest is possible mean the final decision by the Agencies will have the force of law?

Response: No. It is simply pointing out that since the decision will be signed by the Secretaries of Agriculture and Interior, the Agencies' appeals and protest processes will not apply.

9. Comment: The Agencies should make habitat and ecological concerns the top priority.

Response: The Agencies continue to make ecological concerns their top priority. However, the Agencies cannot make such concerns their sole priority. Policy, regulatory, and legal mandates for both agencies provide for multiple use and the production of a variety of goods and services to the extent these services can be provided while meeting an overall and primary goal of protecting ecological processes in the long term, including meeting species persistence objectives described in this SEIS. Examination of the needs of over 1,100 late-successional and old-growth forest associated species during preparation of the Northwest Forest Plan indicated this primary ecological concern can be met while still providing a level of products and services including timber harvest. The alternatives proposed in this SEIS do not alter that objective.

10. Comment: The Agencies should respond to the will of the majority of Americans and stop cutting old growth.

Response: An alternative that reserves all late-successional forests was considered in the 1994 Northwest Forest Plan SEIS, is described in the Alternatives Considered But Eliminated From Detailed Study section of Chapter 2, and is outside the scope of this SEIS.

11. Comment: The Agencies should attempt to synthesize the roadless initiative with this Draft SEIS.

Response: The roadless initiative is being considered in a separate EIS. The potential effects of the preferred alternative in the Roadless Area EIS are considered and discussed in the Cumulative Impacts section of Chapter 3&4.

12. Comment: The few remaining old-growth forests should be protected as a matter of wisdom and justice to all species, in acknowledgment of the rights of all species, not only humans, to have access to the necessities of life.

Response: Changing the mix of Reserve and Matrix land allocations in the Northwest Forest Plan is outside the scope of this SEIS. The characterization that the million acres of late-successional forest in the Matrix is "the few remaining old-growth forests" is incorrect. Approximately 86 percent of the federal late-successional forest in the Northwest Forest Plan area is in reserves, and additional ingrowth in reserves is increasing this number continuously.

13. Comment: The Agencies should save all remaining old-growth forests and use the SEIS to prevent the logging of 1 million acres of mature forests allowed under the current alternatives.

Response: A decision to reserve the million-plus acres of late-successional forests now in the Matrix or Adaptive Management Areas and available for regularly scheduled timber harvest is outside the scope of this SEIS. The comment correctly distinguishes between mature and old-growth forests however. The 1.1 million acres of late-successional forest contributing to the PSQ (Probable Sale Quantity) are presently comprised of about 60 percent mature (generally 80-120 years up to 180-220 years of age) and about 40 percent old growth (older than 180-220 years). These two age groups are collectively referred to as late-successional because most stands meeting these definitions typically contain some or all of the features or habitat components needed by old-growth associated species, even though they would not be described as functional old growth. The impression that the allocations of the Northwest Forest Plan left 1.1 million acres of "old growth" available for timber harvest is incorrect. Any depiction that most of these acres are in large, unfragmented blocks would be similarly incorrect. It should also be noted that many of these acres will be retained over time as managed known sites for Survey and Manage species, green tree retention areas, etc.

14. Comment: The Agencies should enforce the current Northwest Forest Plan survey requirements until the Plan can be rewritten to prevent old-growth logging.

Response: The Agencies are conducting the required surveys. Implementation monitoring shows a high compliance rate with all of the standards and guidelines of the Northwest Forest Plan. Further, there are no plans to rewrite the Northwest Forest Plan to prevent harvest of old growth in the Matrix. Any role these stands may have as habitat for late-successional and old-growth associated species was well considered in the Northwest Forest Plan. Other values of such stands have been considered in the individual land and resource management plans of the individual administrative units of the two lead Agencies and many acres of old-growth and mature forests have been reserved as a result.

15. Comment: The Agencies should include a discussion of recent litigation pertaining to this Draft SEIS in the background section.

Response: A summary of recent, pertinent litigation has been included in Chapter 2.

16. Comment: The Agencies should continue with the current direction to improve the Northwest Forest Plan.

Response: The Northwest Forest Plan was a bold and significant step forward in the way we think about and manage forest resources. However, because it addressed the habitat needs of over 1,100 species, it was necessarily complex. The 1994 Northwest Forest Plan Standards and Guidelines anticipate, and in fact require, changes to standards and guidelines as new information obtained through experience, monitoring, research, and other sources indicates a need. These standards and guidelines read in part “...the concept of adaptive management is straightforward and simple: new information is identified, evaluated, and a determination is made whether to adjust the strategy or goals. Adaptive management is a process of action-based planning, monitoring, researching, evaluating, and adjusting with the objective of improving the implementation and achievement of the goals of these standards and guidelines” (USDA, USDI, 1994b, p. E-13). The Northwest Forest Plan also contains adaptive management language specific to Survey and Manage, including “...as experience is acquired with these requirements, agencies may propose changes to the Regional Ecosystem Office for analysis” (USDA, USDI, 1994b, p. C-6).

17. Comment: The Agencies should not attempt to evade Judge Dwyer’s 1999 ruling by amending the Northwest Forest Plan.

Response: The Agencies identified a need to clarify the Survey and Manage Standards and Guidelines well before Judge Dwyer’s 1999 ruling. Work on this SEIS was started in 1998. The proposed action and the related effects discussions were essentially already drafted when the Court made its finding in August 1999. The Court is aware of this process intended to amend requirements in the Northwest Forest Plan.

The U.S. District Court for the Western District of Washington found that two internal agency instruction memos provided interpretations of standards and guidelines that were not consistent with the language of the Northwest Forest Plan. The Court did not rule on whether the interpretations provided adequate species protection. The Court did not find that management under the Agencies’ interpretation would violate any law other than the laws requiring management in conformance with land and resource management plans. Because the Agencies believe the memos were a reasonable interpretation of what the original authors of the standards and guidelines intended, and provide the type of species management intended in the Northwest Forest Plan, this SEIS clarifies these two issues by incorporating the basic language of these two memos into the standards and guidelines of the action alternatives. The effects sections in Chapter 3&4 include clear consideration of the clarified language. The taxa specialists who prepared the effects sections of this SEIS were aware of the clarifications included in the standards and guidelines and, in fact, assumed the interpretation memos have been followed since the memos

were issued. This assumption is explained as an Effects Assumption Relating to the Action Alternatives under the Background section in Chapter 3&4.

18. Comment: The Agencies should explain why the direction for individual species has changed.

Response: Additional detail has been added to the Final SEIS explaining the reason for proposed changes. For example, the explanation of the category assignment for each species has been expanded on Tables F-1 and F-2; the restructuring of the standards and guidelines for cavity nesting birds and bats has been clarified; standards and guidelines for Canada lynx have been changed to reflect the recent listing under the Endangered Species Act; and, more detail has been provided regarding why *Buxbaumia piperi* was removed from Survey and Manage in 1996. (See Changing Standards and Guidelines - Adaptive Management section in Chapter 2.)

19. Comment: The Agencies should reexamine current land allocation amounts and categories.

Response: The reallocation of lands between reserves and Matrix is outside the scope of this SEIS.

20. Comment: The Agencies should address the need for a different approach to Survey and Manage.

Response: It is too early in the life of the Northwest Forest Plan to conclude it is not effective as written. However, inconsistencies, duplication, omissions, and cost inefficiencies have been identified in Survey and Manage and their overlap with Protection Buffers, as well as with the related measures addressed in this SEIS. The action alternatives have the specific purpose of addressing those problems. The Agencies have learned a great deal about these species, about which little was previously known, from just 6 years of implementing the Northwest Forest Plan. Several species once thought to be extremely rare are now known to be much more common than had previously been assumed. The Agencies still need more information before a major alteration in approach beyond the scope of the action alternatives addressed here should be considered.

21. Comment: The Agencies should address the need to develop proactive, rather than reactive, management policies.

Response: The ecosystem approach of the reserves and other elements of the Northwest Forest Plan was developed to preclude the need for a species-specific approach and preclude the need for further listings of species wholly dependent on federally managed lands in the Northwest Forest Plan area. Late in the development of the Northwest Forest Plan, it became apparent that such a plan could not be confidently said to adequately provide for endemics and species about which little was known. Survey and Manage was added for these species. The designers of the Northwest Forest Plan intended species to be removed from Survey and Manage when new information indicates they are secure under other elements of the Northwest Forest Plan. This concept is continued, and is better explained, in the action alternatives in this SEIS.

22. Comment: The Agencies should retain intact old-growth fragments for scientific purposes.

Response: Eighty-six percent of the federally managed late-successional forest in the Northwest Forest Plan area is in reserves. Studies of the effects of various harvest levels on old-growth species are in progress in all land allocations, particularly in Adaptive Management Areas. Retention of additional old growth for general scientific purposes is outside the scope of this SEIS.

23. Comment: The Agencies should address the management needs of Survey and Manage species to their entire range, both inside and outside the Northwest Forest Plan area, on all lands under their authority.

Response: The decision made in the Northwest Forest Plan was, in part, a conservation strategy for the northern spotted owl to be applied on Forest Service and BLM administered lands. This decision was necessitated by listing of the spotted owl under the Endangered Species Act. Defining the geographic scope to coincide with the range of the northern spotted owl made sense. Re-defining the geographic scope to coincide with each of hundreds, if not thousands of species, would obviously become unwieldy. The species-specific discussions in this SEIS and in the Northwest Forest Plan SEIS do address the known status of each of these species and their needs within their various ranges as appropriate. When land use decisions are being made in other geographic areas within the ranges of these species, no doubt consideration will be given to the information contained in these documents and the effects of management under the Northwest Forest Plan on those species.

24. Comment: The Agencies should adjust the language and terms of the Draft SEIS. There needs to be clear, unambiguous goals and objectives that are measurable.

Response: Language has been substantially clarified in the Final SEIS. Words have been added to the glossary. The Summary and most of the effects discussions in Chapter 3&4 have been rewritten. The species management objectives described in Chapter 2 have been clarified and made more consistent with the stated objectives of the Northwest Forest Plan. A detailed explanation of the species evaluation process used by the experts writing the species effects sections has been added to Chapter 3&4. The monitoring section has been expanded. Finally, the process for adaptive management has been edited for clarity and steps have been added to ensure discovery and use of the latest species information. Results of the annual species review process will be published in the Annual Report. However, Survey and Manage is a mitigation measure applied to other elements of the Northwest Forest Plan and, by itself, only supplies three elements of management direction: manage known sites, pre-disturbance surveys, and strategic surveys. Survey and Manage will, in most cases, not be evaluated by itself, but as part of the overall monitoring and evaluation of the success of the overall Northwest Forest Plan.

25. Comment: The Agencies should clarify why an EIS rather than an Environmental Assessment (EA) was prepared.

Response: The limited nature of the proposed action and the questionable significance of the “needs” led the Agencies to strongly consider doing an EA. The Agencies agree that the environmental consequences to the proposed changes are difficult to discern. Several points contributed to the decision to do an EIS, including a desire to provide a longer and more structured public comment period for the segment of the public with a high level of interest in the Northwest Forest Plan. Other reasons included: (1) a high level of interest and likely controversy as evidenced by the appeal of the 1999 EA which only proposed to delay surveys for 32 species for 1 year; (2) the numerous interpretations needed to clarify the Northwest Forest Plan intent (particularly the details that will guide future adaptive management decisions); (3) the likely level of interest in the proposed removal of more than 70 species in all or part of their range; and, (4) the fact that removing the land allocation of Protection Buffers would require plan amendments.

Public Involvement and Collaboration

26. Comment: The Agencies should create a document that is easier for the general public to understand.

Response: The Agencies have attempted to create a document that is easier to understand by using plain language where possible. The Agencies closely examined comments that pointed out potential ambiguities and undefined or inconsistent terminology. Between the Draft SEIS and the Final SEIS, several terms were clarified, the glossary has been expanded, the Summary has been rewritten, and Chapter 3&4 was rewritten to ensure consistent use of terminology. The description of the Adaptive Management Process in Chapter 2 has also been re-described. Even professional judgment terms like “reasonable assurance” have now been described. Survey and Manage is a relatively technical element of the Northwest Forest Plan that does not readily lend itself to

everyday broad descriptions of actions and alternatives, but every effort has been made to present the alternatives and effects in clear, implementable, and quantifiable ways in the Final SEIS. Nevertheless, addressing over 400 species, many of which are rare and endemics about which little is known, necessarily results in a document with some highly technical discussions.

27. Comment: The Agencies should provide ample opportunity for the public to comment on these issues.

Response: The Agencies have provided the public with ample opportunities to comment. The Agencies chose to do an EIS, in part, to provide a longer and more structured comment period. The standards and guidelines in the Northwest Forest Plan Record of Decision (p. C-6) clearly indicate the Agencies can move species between categories or out of Survey and Manage as new information indicates. Some commenters have suggested that at least this portion of the actions proposed in this SEIS were within the expectations of the original standards and guidelines and could be done without an additional NEPA document and without additional public involvement. Because of the number of changes to species proposed at this time; the clarification of the adaptive management process to be used in the future; the changes to the Protection Buffer, Grazing, and Bats Standards and Guidelines; and the high public interest in the Northwest Forest Plan, the Agencies decided to use the EIS process, including its public involvement steps, to accomplish this proposed action.

28. Comment: The Regional Community Economic Revitalization Team (RCERT) should be asked for input on this Draft SEIS, particularly when addressing socioeconomic impacts.

Response: The RCERT is responsible for ensuring an equitable distribution of funds within the region, for identifying and addressing barriers and red tape, and for sharing information and innovative approaches across the region (see *The Northwest Forest Plan: A Report to the President and Congress, 1996*). The RCERT does not have a permanent staff. They would call on agency staffs for addressing socioeconomic impacts which are the same staffs the SEIS Team used.

29. Comment: The Agencies should extend the Draft SEIS comment period.

Response: Various comments were received requesting an extension; however, none of these requests included any compelling reasons for extending the comment period. While it is logical that allowing additional time to comment would result in additional comment letters, the breadth of comments received during the comment period appears to have provided a wide range of thoughts, concerns, and opinions. As noted in the introduction, more than 150 letters were received after the close of the comment period. These letters were reviewed and any substantive information they contained were considered in the preparation of the Final SEIS. An extension of the comment period is not needed.

30. Comment: The public comment meetings should be more convenient and decision-makers should be accessible to the public.

Response: No public meetings were scheduled for this SEIS because of the limited scope and technical nature of the proposed action. The public letters have all been reviewed by the Agencies' personnel. Public comments will be considered by the decision-makers when preparing the Record of Decision.

31. Comment: Some of your Provincial Advisory Committees (PACs) were given briefings during the 90-day public comment period, but you did not coordinate these briefings with the Interagency Advisory Committee or provide briefings for all PACs.

Response: Advisory groups chartered under the Federal Advisory Committee Act were given briefings upon request. Not all such groups requested these briefings.

Chapter 2

Issues

32. Comment: Since the acreage to be managed as known sites vastly exceeds levels discussed in the Northwest Forest Plan Final SEIS, none of the alternatives respond to Issues 1 and 4.

Response: All of the alternatives were designed to meet Issue 1, species management objectives. This is consistent with the balanced purpose statements in the Northwest Forest Plan (see Chapter 1). Issue 4, like the other issues, presents an objective and provides a measure against which to rank or evaluate alternatives. This approach is consistent with the instructions of President Clinton at the 1993 Forest Conference and noted in the 1994 Northwest Forest Plan Record of Decision: “Where sound management policies can preserve the health of the forest lands, sales should go forward” (USDA, USDI 1994b, p. 3). While the Northwest Forest Plan predicted a PSQ, Survey and Manage was also mentioned as providing uncertainty regarding attainment of that PSQ. Two of the alternatives in this SEIS are estimated to provide PSQ levels of 96 and 94 percent of the currently declared level, a level within the range of the uncertainty identified in the 1994 Final SEIS. The Northwest Forest Plan recognized that Survey and Manage would have an effect on PSQ. Two of the alternatives substantially reduce that effect when compared with the No-Action Alternative, but none of the alternatives proposed here seek to completely eliminate that effect.

33. Comment: Issues 2 and 3 should not be considered issues, but management decisions.

Response: Issues regarding efficient use of Agency expertise and resources and regarding the clarification and elimination of duplication in the standards and guidelines reflect the narrow purpose of this SEIS. Since a primary purpose of the SEIS is to clarify and to increase efficiency of the Survey and Manage Standards and Guidelines, these issues are appropriate for comparing the various alternatives.

34. Comment: The Agencies should explain how the SEIS deals with concerns relating to early and mid-successional forest associated species.

Response: The need for the Northwest Forest Plan was based on Agency timber harvest schedules, existing at that time, that were systematically converting late-successional and old-growth forests to younger stands. The 1994 Final SEIS explains that there is not a similar concern for early-successional forest associated species because harvest in the Matrix and on private lands, as well as natural disturbances in the reserves, will continue to provide adequate habitat for early-successional forest associated species. No early-successional forest associated species were intentionally included in Survey and Manage. Concerns to these species are discussed in the Species Associated With Early-Successional Forest section in Chapter 3&4.

NEPA Process

35. Comment: Survey Protocols and Management Recommendations are policy rather than technical decisions and should comply with the National Environmental Policy Act (NEPA).

Response: Management Recommendations describe how to manage known sites and provide criteria for making high-priority site decisions in the field. Survey Protocols describe how and where, or where not, to conduct pre-disturbance surveys. These instruction documents are prepared by teams of biologists with specialized knowledge of the species involved. The need to provide such direction is assumed with assigning species to Survey and Manage and the nature of that direction is technical, not policy. The decision to manage these species using Survey and Manage is a policy decision that will be made through this SEIS. The implementing details of how to identify the species in the field, how to determine whether they are present on a particular

parcel of land, and what must be done or avoided in order to reasonably ensure continued occupancy of sites are technical decisions. Such decisions do not escape public comment or potential review, since the projects affected by these protocols and recommendations have NEPA documentation and are subject to administrative and judicial review. Furthermore, the final versions of these recommendations and protocols are public documents and are available for review. The Agencies are always open to receive information from the public that would assist them in refining and improving these recommendations and protocols. Information can be sent to the Interagency Survey and Manage Program Manager, c/o Regional Ecosystem Office, P.O. Box 3623, Portland, OR 97208-3623 as noted in the standards and guidelines. If these documents cause unanticipated impacts on the accomplishment of the objectives of the Northwest Forest Plan, this should be discovered through the monitoring processes and periodic reviews.

36. Comment: Since the Species Review Panel includes managers, the process involves professional judgment, and there is no clear formula for the decisions, it cannot be described as a technical exercise that does not need environmental analysis.

Response: Although the criteria for the categories and for removing or adding species are designed to be repeatable and to confidently provide the level of protection intended by the selected alternative, it is acknowledged that the magnitude or complexity of decisions made in some future years might require additional environmental analysis. A statement has been added to the description of the annual species review process stating that “Prior to the annual application of results, the Agencies will examine whether the magnitude and nature of changes indicate a need for additional environmental analysis (e.g., an Environmental Assessment). The results of this examination will be documented in a Findings of Administrative Review document and summarized in the Annual Report.”

37. Comment: The five changes to standards and guidelines between 1995 and present are not just technical changes and should have been done with proper NEPA analysis. These changes were made without applying any of the criteria used in the Draft SEIS and without Regional Interagency Executive Committee (RIEC) review and approval. These changes should be discussed in the Final SEIS.

Response: NEPA provides for several levels of documentation depending upon the significance of the proposed action. The changes complied with the requirements of NEPA and were consistent with the Northwest Forest Plan Standards and Guidelines, including the requirements for review and concurrence by the RIEC. In general these decisions are considered completed and are outside the scope of this SEIS. These changes included:

1. Mountain hemlock dwarf mistletoe was removed from Survey and Manage because, much like the species proposed for removal in this SEIS, it was determined to not be at risk in Oregon and California. It was known from four sites in Western Washington in very old forests in cold, wet areas with heavy snow pack; all four sites are in reserves. It was more appropriate to manage the species under Component 4 rather than the specified Components 1 and 2. The Regional Ecosystem Office (REO) coordinated interagency review and issued the final change. The change was consistent with the language included in the Northwest Forest Plan Standards and Guidelines (p. C-6), and was not significant enough to trigger additional NEPA documents in part because effects were consistent with the 1994 Northwest Forest Plan Final SEIS.
2. Canada lynx is a Protection Buffer, not a Survey and Manage, species. Like other Protection Buffer species, it was assigned an implementation schedule to match one of the Survey and Manage Components. Implementation of the lynx direction was linked to the Component 2 implementation schedule. Since the management direction for lynx clearly relies on broad-scale surveys, similar to those of Survey and Manage Component 3, the link to Component 2 was determined to have been an editing error in the Northwest Forest Plan. The change, which received interagency review coordinated through the REO, simply corrected this error. There is no indication that

the effects discussion in the Northwest Forest Plan relied on this flawed assignment and no additional NEPA documentation was required to correct this error.

3. *Buxbaumia piperi* was removed from Protection Buffer status in a joint decision letter by the Forest Service and BLM because conversations with staff who worked on the Northwest Forest Plan, and a clear reading of the record, indicates it was included in the Northwest Forest Plan by mistake. No additional NEPA documentation is needed to correct such an error.
4. Adding “south range” to “Understory and forest gap herbivores” also simply corrected an error. Documentation of the work of the Additional Species Analysis Team in Appendix J2 of the Northwest Forest Plan Final SEIS shows the “south range” qualifier on the group to be added to Survey and Manage and the detailed SEIS analysis was made with this condition. The words were simply omitted when Survey and Manage was appended to the Northwest Forest Plan Record of Decision. No additional NEPA documentation is required to make such a correction and interagency review was coordinated through REO.
5. The decision to delay surveys on 32 species was based on an environmental analysis that concluded the risk to species would not be substantially increased from that described in the Northwest Forest Plan Final SEIS, partly because more acres are in reserves and total harvest levels are lower than predicted in that Final SEIS. This delay does not affect the alternatives in this SEIS; there was no decision made that carries over into the action alternatives. The status of delaying surveys for 32 species is outside the scope of this SEIS.

38. Comment: The Agencies have failed to use the best available science in the decision-making process.

Response: The Agencies’ experts used in the preparation of this SEIS are highly qualified, as evidenced by information included in the list of preparers. Additionally, scientists from outside the Agencies have supplied information to this SEIS directly to the Agencies’ scientists upon request, to the Species Review Process participants, through publications, or through comments on the Draft SEIS. That information has been used as appropriate. Of the information submitted to the Agencies during the public comment process, the vast majority was already known and had been used to formulate the species assignment recommendations. Appropriate changes, including changing species assignments to categories, were made between Draft and Final SEIS in response to new information.

39. Comment: The Agencies allow political expediency to overrule reasoned scientific conclusions in the decision-making process.

Response: The specialists and scientists who prepared the effects discussions in this SEIS, who continue to be involved with preparation of required Survey Protocols or Management Recommendations, and who participate in the annual Species Review Process, are among the most qualified persons with respect to these species in the Northwest Forest Plan area. In each case, these individuals are well versed in the most recent science relative to their taxa specialty and their written conclusions are well referenced in this document and in the Species Review Process records. REO review of Management Recommendations, Survey Protocols, the Strategic Survey Plan, and exceptions to specified measures will help ensure the most applicable science is reflected in these documents. The annual Species Review Process results will be reviewed by the RIEC, which includes representatives from the land management and regulatory agencies. In each action, however, decisions about species management are made in the context of the standards and guidelines, the persistence objectives of the selected alternative, the needs of species as indicated in the analysis in this SEIS, and any new information. If scientists draw unsupported conclusions or recommend managing for objectives other than those described in this SEIS and the Northwest Forest Plan, management will require the recommendations be rewritten to reflect objectives or

could choose not to act on those recommendations. This is one of the appropriate roles of management in the implementation of the standards and guidelines of the selected alternative.

Relationship to Existing Laws, Regulations, and Plans

40. Comment: The BLM should complete all third year reviews before finishing the current proposed plan.

Response: These two actions are not necessarily related and there is no reason why one should precede the other. If that review indicates changes are needed, they will be pursued in a separate decision-making process. In addition, the initial third year review period for evaluation would not include information relevant to the implementation of the Survey and Manage Standards and Guidelines, which, for the most part, did not begin until the fourth year of the Northwest Forest Plan.

41. Comment: The Agencies should postpone amendment to the Northwest Forest Plan for Survey and Manage Standards and Guidelines until the new planning regulations are finalized.

Response: A discussion of the relationship between this SEIS and what is expected to be in the new planning regulations (based on current drafts) has been added to the Cumulative Impacts section in Chapter 3&4.

42. Comment: The Agencies should create a litigation-proof Survey and Manage SEIS.

Response: The Northwest Forest Plan addresses a complex and controversial area covered by many laws. The Survey and Manage mitigation measure is one small piece of that plan. The Agencies have a genuine interest and legal responsibility to manage the lands under their stewardship according to laws, regulations, policy, and administrative and congressional direction. They take this responsibility seriously. The clarifications and restructuring of Survey and Manage proposed by the action alternatives in this SEIS are designed to continue to accomplish the original objectives of the Northwest Forest Plan. To the degree genuine disagreement exists over the intent or interpretation of one or more of the laws governing this action, individuals have the right to challenge the decisions made by the Agencies.

43. Comment: The Agencies should not set aside lands suitable for timber harvesting and should draft an amendment that complies with the O&C Lands Act of 1937.

Response: The application of the O&C Lands Act to the Northwest Forest Plan is described in the Northwest Forest Plan Record of Decision (p. 49) and in the Northwest Forest Plan Final SEIS (pp. F-114 and F-115). The alternatives considered in this SEIS do not change any assumptions made in the Northwest Forest Plan. This amendment does not alter the land allocations made in the Northwest Forest Plan on O&C lands other than the minor adjustments in land allocations related to certain Protection Buffer species.

44. Comment: This amendment should not apply the Forest Service “viability” provision to O&C lands.

Response: The alternatives considered in this SEIS do not change any assumptions made in the Northwest Forest Plan Record of Decision relative to the application of the Forest Service “viability” provision (36 CFR 219.19) or any other wildlife standards to BLM administered lands. The Northwest Forest Plan ROD explicitly recognized that the viability provision did not apply to BLM administered lands, but it was also recognized that management for the long-term diversity of forest species was within the authority of BLM’s management of the O&C lands. This interpretation of the breadth of BLM’s authority under the O&C Lands Act was upheld by the U.S. District Court for Western Washington and the Ninth Circuit Court of Appeals. This SEIS has a very limited scope. The only changes being considered are changes to the Survey and Manage

and related mitigation measures applied to the Northwest Forest Plan in 1994. The finding of consistency on the Northwest Forest Plan with the O&C Lands Act in the Northwest Forest Plan Record of Decision, which was upheld by the Ninth Circuit, is still under review by the U.S. District Court for the D.C. Circuit.

45. Comment: Protection of non-vertebrate species is not justified under the Forest Service viability provision or the Endangered Species Act and violates the Multiple Use Sustained Yield Act, National Forest Management Act, and the Oregon and California Lands Act.

Response: The applicability of various laws to the management of non-vertebrates and to the guiding regulations of the Agencies is discussed in the Northwest Forest Plan Record of Decision (pp. 38-53). These interpretations have been upheld in court actions or are being discussed in current litigation and are not being re-discussed here. Nothing in the proposed action changes this aspect of the Northwest Forest Plan. The proposed action does not change the species persistence objectives or the applicability of various laws and regulations to lands managed by the Agencies.

46. Comment: The Agencies should effectively implement the Northwest Forest Plan to avoid continued social and economic costs to resource-dependent communities.

Response: As noted in Chapter 1, the Agencies have had difficulty implementing the Survey and Manage and related mitigation measures. This SEIS is designed to amend those mitigation measures so that the Agencies can more effectively implement them. It should be noted that the laws governing the resources addressed in the Northwest Forest Plan are complex and the comprehensive nature of the Northwest Forest Plan makes its implementation equally complex. However, in spite of controversy, the successes in the implementation of the Northwest Forest Plan and the resource protections that it offers should not be understated. The Agencies, in part through this action, are continuing to implement the Northwest Forest Plan as it was intended.

47. Comment: The Survey and Manage Standards and Guidelines should support the balanced objectives of the Northwest Forest Plan of providing for species and providing for a sustainable supply of timber and other products.

Response: The action alternatives in this SEIS build on the original Purpose and Need for the 1994 Northwest Forest Plan and seek to clarify the Survey and Manage and related standards and guidelines, so they can be applied as originally intended. The dual purposes of the Northwest Forest Plan, including “the need for a healthy forest ecosystem with habitat that will support populations of native species (particularly those associated with late-successional and old-growth forest)” and “the need for a sustainable supply of timber and other forest products that will help maintain the stability of local and regional economies on a predictable and long-term basis” are repeated in Chapter 1 and referenced in the Purpose statement in this Final SEIS. Eliminating confusing and duplicate language “which results in more restrictions on timber harvest and other management activities than needed to meet species persistence objectives” is included in the needs statements for this Final SEIS. The extent the action alternatives result in different areas being available for timber harvest as compared with the No-Action Alternative as written, is consistent with the Underlying Need for this SEIS. This SEIS is not being written because species were at risk. It is being written because confusing, conflicting, and unclear standards and guidelines are unnecessarily impacting other forest management activities and causing unnecessarily high implementation costs, when compared with that intended by the balance provided by the 1994 Northwest Forest Plan. The proposed action was designed to continue the level of species protection intended in the Northwest Forest Plan. The proposed action would supply 94 percent of the currently declared PSQ, an increase from the level predicted to be available under the No-Action Alternative. Other management activities, including restoration, will be similarly affected.

48. Comment: Adequate funding and administrative commitment are needed to ensure interagency cooperation for implementation of the Northwest Forest Plan.

Response: The analysis in this SEIS is based on an assumption the alternatives will be implemented as described and has already resulted in increased funding. The effects of the alternatives displayed in Chapter 3&4 are based on the assumption the standards and guidelines will be sufficiently funded to be implemented as described. Adequate funding is assumed for all alternatives. However, if funding is less than anticipated or is stretched out over a longer time period, there are controls built into the standards and guidelines to prevent adverse effects to species. The Agencies are also committed to coordinating their efforts in implementing the Northwest Forest Plan.

Background

49. Comment: References to the alternatives in the conclusions sections should be modified to agree with the relevant text sections.

Response: The effects summaries have been corrected to agree with their parent text in Chapter 3&4 and to correctly reference the alternatives. Species outcomes have been expressed with standard outcome statements. These outcomes are listed in Table 2-13 near the end of Chapter 2.

50. Comment: The alternatives considered in the Draft SEIS call for surveying fewer species, surveying less habitat, and logging more old growth than in the original plan. The Draft SEIS should increase, not decrease, protection for old-growth ecosystems.

Response: The preferred alternative was designed to provide the level of management originally intended in the Northwest Forest Plan. The difference in harvest levels between the No-Action Alternative and Alternative 1 results simply from the elimination of management not necessary to meet persistence objectives. The Northwest Forest Plan standards and guidelines called for removal from Survey and Manage “...any species whose status is determined to be more secure than originally projected” (USDA, USDI, p. C-6). None of the alternatives increase harvest of mature or old-growth forests above what was anticipated when the Northwest Forest Plan was written.

51. Comment: The original timeframe and budgetary analyses for implementation of surveys have proven inaccurate.

Response: The Agencies have had difficulty meeting the pre-disturbance survey requirements of the Northwest Forest Plan because surveys were specified for species for which such surveys are not practical. This is clearly an error in the Northwest Forest Plan; the authors did not intend to include species “...whose characteristics make site and time-specific surveys difficult.” This error, and the lack of a clear process or criteria to correct it, has been the primary reason for delays and extra costs.

52. Comment: The Agencies have yet to allocate sufficient resources to implement the Survey and Manage Standards and Guidelines.

Response: The Agencies have conducted the pre-disturbance surveys described in the Northwest Forest Plan for all species for which pre-disturbance surveys are practical. Clarification of specific species objectives done during analysis for this SEIS has helped focus *strategic* survey objectives. Strategic surveys are now moving ahead for all species. Although activities are being affected by Survey and Manage species sites more than anticipated in the Northwest Forest Plan SEIS, this fact should not be construed to mean the Survey and Manage Standards and Guidelines have not been completely implemented.

53. Comment: The Agencies’ implementation of pre-disturbance surveys is not adequate as evidenced by the delay of surveys for 32 at-risk nonvertebrates until fiscal year 2000.

Response: This delay affected 32 species for which practical methods for pre-disturbance surveys had not yet been devised and for which the delay would not substantially increase risk to the species. The effects of this delay were analyzed and documented in an Environmental Assessment (USDA, USDI 1998j). This EA and its related Decision Notices are described in Chapter 2 of this SEIS.

54. Comment: The alternatives require strategic surveys to begin within 5 or 10 years depending on the category. Given the Agencies' implementation history to date, what is different now that will make these surveys happen?

Response: Extensive and general regional surveys were to start by 1996 for approximately 335 Survey and Manage species. The Agencies were slow to implement these surveys, in part, because their objectives were poorly defined and, in part, because of the effort to get other aspects of the Northwest Forest Plan underway. Some of the major efforts the Agencies were devoting resources to during the early stages of implementing the Northwest Forest Plan were: (1) Watershed and Late-Successional Reserve Assessments; (2) Survey Protocols for pre-disturbance surveys; and, (3) planning for new activities including timber sales that are in compliance with Northwest Forest Plan objectives and standards and guidelines. Today, most of these processes and standards and guidelines of the Northwest Forest Plan have become familiar. The analysis associated with this SEIS has clarified the objectives and information needs of strategic surveys; these surveys are now underway for most species and are expected to continue to move forward quickly. The start dates have been removed from these categories in the Final SEIS because current progress on strategic surveys makes this start date requirement moot.

55. Comment: The Agencies should include intermediate goals and objectives in the standards and guidelines for strategic surveys to better track progress.

Response: A Strategic Survey Plan is required to be displayed in the annual status reports, along with progress summaries. However, as a result of analysis for this SEIS, there is an increased awareness on the part of the Agencies that the primary tool for removing species from Survey and Manage, or assigning them to more appropriate categories, is strategic surveys. Further, the standards and guidelines for Alternatives 1 and 2 require completion of strategic surveys for nearly two-thirds of the species within 5 years (10 years for fungi) before activities can take place in old growth. Because of these factors, strategic surveys for most species began this year. Intermediate goals should not be needed.

56. Comment: When will the Strategic Survey Plan be completed?

Response: Although there is no "due date" for the Strategic Survey Plan, current budget emphases, good work planning, and due dates for certain strategic surveys dictate that an initial plan needs to be completed soon. The Agencies are working on it now and expect to have a draft version prepared and sent to the RIEC for review within the next 6 months. A status report and summary will be included in each annual report.

57. Comment: A standard template for the comparison of the alternatives should be developed to ensure consistency within the document.

Response: The Agencies have improved consistency within the document by standardizing the conclusions in the environmental consequences discussions in Chapter 3&4 and by rewriting the Summary and Comparison of Alternatives sections in their entirety. The prescribed analytical process and standardized terminology used by the species effects writers is discussed in the background section early in Chapter 3&4 and in Appendix J in the Final SEIS. The standardized outcome for each species is listed on Table 2-13.

58. Comment: Timber sale revenue should be considered when choosing an alternative.

Response: Timber sale revenues are considered as part of the PSQ predictions. The actual revenues vary according to market prices which are not easily predictable. Potential harvest level is one of many factors that will be considered by the decision-makers in selecting an alternative.

59. Comment: The Agencies should retain the Protection Buffer mitigation measure because the resultant Late-Successional Reserves serve the broad array of late-successional forest associated species.

Response: Combining the Protection Buffer species with Survey and Manage continues to provide the same level of protection intended in the Northwest Forest Plan because the actual management at each species site will remain essentially unaffected by these measures. The elimination of the underlying Late-Successional Reserve or Managed Late-Successional Area designation eliminates unmapped, generally 2 to 5-acre, single species Late-Successional Reserves and Managed Late-Successional Areas that are otherwise so scattered that they do not contribute to the overall objectives for such reserves. In fact, in some cases the single-species requirements for the Protection Buffer species conflict with the overall Late-Successional Reserve Standards and Guidelines. Late-Successional Reserve Assessments are not needed because the management requirements for such sites are described in the species-specific standards and guidelines which are retained as the Management Recommendation. The proposed removal of the land allocation designations increases management efficiency and reduces conflict and duplication.

60. Comment: The Agencies have failed to justify elimination of the Protection Buffer Standards and Guidelines, which were intended by FEMAT to be important elements of the Late-Successional Reserves and Managed Late-Successional Areas.

Response: As described in Chapter 2 of this SEIS, the Protection Buffers were originally included in the report of the Scientific Analysis Team as species-specific mitigation measures added to A *Conservation Strategy for the Northern Spotted Owl* (Thomas et al. 1990), and they were incorporated into several FEMAT alternatives for the same purpose. The administrative record for the Northwest Forest Plan indicates the Protection Buffers were aligned with the Late-Successional Reserves and Managed Late-Successional Areas because the management they described resembled that required for those land allocations, not because they were considered important elements of the allocations (in minutes of the meeting of the Scientific Advisory Group to the SEIS Team, October 1993, Question 14). Protection Buffers are small, and the actual numbers (like Survey and Manage sites) were estimated to be small. Continuing to manage Protection Buffer sites as single-species Survey and Manage sites will have no effect on the other species benefits attributed to the Late-Successional Reserves and Managed Late-Successional Areas in the Northwest Forest Plan Final SEIS.

61. Comment: The Agencies should strengthen, not weaken, survey requirements for rare species associated with old-growth ecosystems.

Response: The preferred alternative, and the other action alternatives as well, strengthen the survey requirements by clarifying objectives, removing duplication and ambiguity, and changing or removing species so management best meets the needs of the individual species. These changes improve the Agencies' ability to focus resources and establish priorities where they contribute most to meeting species persistence objectives. The net result is that the action alternatives each provide more effective Survey and Manage Standards and Guidelines.

Adaptive Management

62. Comment: Adaptive management should be used zealously by the Agencies as a primary tool in providing for meeting species persistence objectives.

Response: Designing and displaying the elements and parameters of an adaptive management process that is functional, clear, and consistently repeatable is a critical objective of this SEIS.

New information is required to be gathered, summarized, and reviewed by experts at least annually to ensure species are in the right categories. Continued implementation monitoring will ensure consistent application of these standards and guidelines or quickly reveal any needs to change. The strategic surveys discussion in Chapter 2 has been expanded to better show how new information will be gathered and considered in the adaptive management process.

63. Comment: The Agencies should use adaptive management to achieve an enduring stewardship standard.

Response: With this SEIS, the Agencies are using the adaptive management process described in the Northwest Forest Plan ROD (USDA, USDI 1994b, pp. E-12 through E-15). As described in that section, the Agencies will continue to use the process when new information indicates a need for other changes to the Northwest Forest Plan.

64. Comment: A general section on the adaptive management process should be drafted.

Response: The adaptive management sections describing how to change species assignments to categories, or to add or remove species from Survey and Manage, is included in both Alternatives 1 and 2 because of differences in the handling of the uncommon categories and the criteria indicating a concern for persistence. The sections have been simplified by eliminating repetitious criteria for categories, instead deferring to the category descriptions earlier in the alternative description. This permitted the elimination of the adaptive management section in Alternative 3 in favor of a reference to the now identical section in Alternative 1. A more general section about the future use of adaptive management to make changes to standards and guidelines is not needed because it would duplicate the discussion in the Northwest Forest Plan ROD (USDA, USDI 1994b, pp. E-12 through E-15.)

65. Comment: Timelines for implementing adaptive management and feedback to field units need to be stated.

Response: The Species Review Process will be conducted “at least annually.” Results of these adaptive management changes will be included in the annual status report (see Chapter 2).

66. Comment: The Agencies should complete extensive and general regional surveys to supply information meeting scientific rigor before they say they have enough information to be doing adaptive management.

Response: The changes proposed in this SEIS are limited to changes where there is currently sufficient information to indicate a need for the change and there is sufficient information upon which to make an informed choice from among the alternatives. The proposal to remove species, for example, is based on information at a sufficient quality and quantity to support a finding that elements of the Northwest Forest Plan, other than Survey and Manage, are sufficient to provide a reasonable assurance of persistence. If extensive and regional surveys were already completed, the proposals in this SEIS to change categories or remove species from Survey and Manage would undoubtedly be substantially different.

67. Comment: The Agencies should use the adaptive management process more zealously and propose elimination of categories and pre-disturbance surveys.

Response: There is not enough new information about most Survey and Manage species, or experience with implementing the entire Survey and Manage mitigation measure, to support more changes than the alternatives propose.

68. Comment: Adaptive management is unscientific as formulated and should not be used to implement the Northwest Forest Plan.

Response: Survey and Manage is a mitigation measure supplementing the reserves and other elements of the Northwest Forest Plan for specific species. The particular species concerns that led to this mitigation measure are documented in Appendix J2 of the 1994 Northwest Forest Plan SEIS. The parameters that led to these concerns are the same as those addressed by the criteria in the adaptive management sections in this SEIS. Implementation of one of the adaptive management sections in the SEIS will result in changes of the kind expected by the original authors of the Northwest Forest Plan and appropriate for the species. The original authors anticipated, on page C-6 of the Record of Decision, that as the Agencies gained information through surveys of these species that changes would be made, including removal of species from the Survey and Manage mitigation measure.

69. Comment: The adaptive management process should include a species watch list category, or alternatively, additions should be allowed to Categories 1E and 1F.

Response: The standards and guidelines of the action alternatives have been changed to permit adding species to Categories 1E and 1F, if they meet the criteria for concern for persistence (see Chapter 2). Also, the standards and guidelines have been clarified to state that compliance with the third basic criteria is to be determined by comparing current information with the Concern for Persistence criteria. This means species may be added about which little is known and species may be added to any category. This change was made in response to public comment.

70. Comment: The Agencies should rely less on qualitative criteria for adding, removing, or changing designations of species.

Response: The current, potentially qualitative wording of the criteria permit the panel and the RIEC to consider the origin, distribution, and likely accuracy of the available data. Historic sites are considered differently than current sites, sites of species easily confused with others are treated differently than sites for large and unique species, numbers of sites can be considered in the context of the amount of surveys conducted, and so forth. Terms such as “likely extant” permit this level of professional judgment and result in better decisions for these species.

71. Comment: The Adaptive Management section of the Draft SEIS should clarify the process for change of species status.

Response: The Adaptive Management section has been edited in the Final SEIS to more clearly describe the process for using new information to make decisions about adding, removing, and changing species between categories.

72. Comment: Without NEPA analysis for the annual Species Review Process, how can the public be involved or challenge the decisions?

Response: The Agencies will involve the public and keep resultant changes and their application visible to the public, so potential concerns about any particular species or area may be surfaced. First, Agencies will utilize a data call, open conference, or other method of soliciting appropriate new information about Survey and Manage species. Second, the results and any adaptive management changes will be included in the annual reports. Individuals or groups who would like to receive the annual report should write to the Interagency Survey and Manage Program Manager at the Regional Ecosystem Office, P.O. Box 3623, Portland OR 97208 and request to be added to the mailing list. Public comments about species changes or anything else in the annual report are invited at any time and should also be addressed to the Survey and Manage Program Manager. Third, Agency NEPA documents for activities will identify if any changes in categories have been applied to the planned activity, or will reference the specific year an assignment was made (as documented in the annual report) that appropriately applies to that activity or project. Specific public concerns about the application of a particular species assignment may be directed at the activity applying the new assignment. Public participation is also invited at other points in the process. For example, teams conducting annual Northwest Forest Plan implementation monitoring at the province level include representatives from public groups.

However, as noted in the adaptive management discussion under each alternative, the parameters for making adaptive changes are part of the proposed action and, as long as the changes are within these parameters, they would not constitute a change in this decision or constitute new information on effects not already anticipated and addressed in this SEIS. Prior to application of results, the Agencies will examine whether the magnitude and nature of changes indicate a need for additional environmental analysis (e.g. an Environmental Assessment). The results of this examination will be documented in a Findings of Administrative Review document that will be summarized in the Annual Report. Also, the accumulation of such changes over time will be monitored to ensure their application is having the intended result and the effects of such changes are within the scope of those described in this SEIS.

73. Comment: The Draft SEIS says that the Survey Protocols, Management Recommendations, and the Strategic Survey Plan will be reviewed by the REO. Does the REO have the biological expertise to ensure the scientific credibility of these documents?

Response: Much of REO's review work is accomplished by work groups led by REO members and staffed by technical experts from the various agencies. The results of this work are documented, and both REO and RIEC members have the biological professional backgrounds to understand and appropriately question this documentation. They seek additional professional and technical expertise as appropriate. Further, actions submitted to RIEC members for action are typically examined by appropriate staffs within the member agencies before final action.

74. Comment: There needs to be a way to add new species to Survey and Manage. There are many very rare species that have only recently been identified or were missed by FEMAT.

Response: Each of the action alternatives includes provisions for adding species to Survey and Manage. As described in the adaptive management process for all alternatives, species may be added if they: (1) are published taxonomic entities; (2) are closely associated with late-successional forests; (3) are found in the Northwest Forest Plan area or nearby with potential habitat in the area; and, (4) based on current information, the reserves and other elements of the Northwest Forest Plan (other than Survey and Manage) do not appear to provide a reasonable assurance of persistence using the criteria for concern for persistence specific to that alternative. These criteria are the same as those used to keep species on, or remove species from, Survey and Manage. Species may be added to any category except 2D. New species will be considered as part of the annual species review process.

75. Comment: The SEIS needs to clarify how 14 species removed from Survey and Manage because they are not closely associated with late-successional forests will be provided for between now and when they are considered for the Agencies' special status species programs.

Response: A provision has been added to the standards and guidelines requiring known sites of these species to be managed until their disposition is clarified under the special status species programs or a decision is documented not to include them in those programs. As noted on Table 2-2, there are 22 species that are proposed to be removed from Survey and Manage because they are not closely associated with late-successional forests. Disposition of these 22 species will be described in the Annual Report.

76. Comment: The SEIS should state whether species can be re-added to Survey and Manage once removed, if strategic surveys or other information indicates there is a need.

Response: The provision to add species in the future has been clarified. If a species meets the criteria for concern for persistence, it can be re-added to Survey and Manage. The exception to this are the 45 species in Category 2D. A theme of Alternative 2 is to begin reducing reliance on the Survey and Manage mitigation measure and rely on other programs designed to accomplish some of the same things. The Agencies' special status species programs are designed to prevent listings under the Endangered Species Act or otherwise focus special management, and may include surveys prior to habitat-disturbing activities and management of known sites, as needed for conservation of the species.

77. Comment: Species removed because they are not closely associated with late-successional forests, or, in Alternative 2, species removed because they are in Category 2D, will be considered for other agency programs. There needs to be a specific commitment or guarantee.

Response: The objectives of these programs are described in Chapter 2, Species Removed from Survey and Manage and Related Standards and Guidelines section, and more in the discussion of the Adaptive Management Process for Alternative 2. The standard for inclusion in the other agency programs is generally more conservative, but the programs are designed, at a minimum, to manage species to preclude listing under the Endangered Species Act and, for the Forest Service, to meet the viability provision of the National Forest Management Act implementing regulations. Species whose status indicates they need these programs will be added. The Agencies have already begun to consider the 22 species proposed for removal because they are not closely associated with late-successional forests.

Survey Protocols

78. Comment: The Agencies should reconsider the timeframes that have been set for development of pre-disturbance Survey Protocols.

Response: The grace periods defined for species newly assigned to categories requiring pre-disturbance surveys permit 1 year to: (1) gather the best science, then identify and describe the habitats needing surveys; (2) describe survey procedures that will meet the practicality standard; (3) obtain appropriate technical review; (4) complete the REO review step; (5) transmit all needed information to the field; (6) conduct any needed training; and, (7) perhaps even hire specialists or crews. The next year, or two if the protocol requires 2-year surveys, is for the actual surveys. Although quicker completion of these steps would be desirable, it is generally not feasible. This is a practical scenario and the effects discussions in Chapter 3&4 are presented accordingly. This approach is similar to the one used in the No-Action Alternative.

79. Comment: The Agencies should include equivalent-effort survey requirements in every alternative, since extensive and general regional surveys did not begin on time and apparently will not be completed by 2006 as required in the Northwest Forest Plan.

Response: Chapter 3&4 displays the effects of each of the alternatives and, in some cases, attributes those effects to specific provisions in the alternatives. The decision-makers will consider those effects in the context of the Purpose and Need and applicable laws, regulations, and policy when making their decision about which alternative, or combination of alternatives, to select. That selection may be one alternative as described, or may combine the provisions of more than one alternative, particularly where specific effects can be attributed to a particular provision. If we added every provision to every alternative, the alternatives would become indistinguishable and there would no longer be a range of alternatives. Equivalent-effort surveys would be a controversial requirement to add to every alternative because it is not clear that its costs are worth its benefits. Since it is a requirement that would reflect a value of preferring wildlife values over economic values, we considered this provision as part of the alternative which would most reflect such a value choice. Strategic surveys for most species have already begun. It is important to note that identification of the new categories and other provisions of the action alternatives have already clarified the need and objectives for strategic surveys, resulting in a substantial increase in strategic surveys for fiscal year 2000.

80. Comment: The Agencies should revise the criteria that allow managers to avoid surveys where they decide there will not be a significant negative impact. Activities triggering surveys should be identified in Survey Protocols.

Response: This is not possible because of the range of habitat requirements and the range of effects from particular activities. Even a timber sale might not affect a Survey and Manage species if the sale does not affect the habitat components upon which the species relies. Survey Protocols do contain criteria to consider when deciding whether a proposed activity triggers

surveys, but do not identify activities that always do, or always do not, trigger surveys.

81. Comment: The standards and guidelines should just require surveys be completed before the NEPA decision or decision document is signed and remove the word “implementation.”

Response: This idea was adopted in order to avoid confusion with other potential interpretations of that term. As described elsewhere in this appendix and in Chapter 2, the activity decision point is a good time to identify as the due date for pre-disturbance surveys. The date of the decision document represents the point when all of the environmental information is gathered, the decision-maker makes an informed decision, and investments begin to be made to carry out the decision. In the case of timber sales, paint is applied, roads are surveyed, prospectuses are offered, and so forth. Although these are not irreversible actions, they are a substantial investment with taxpayer money. To require completion of surveys prior to that point, and not require additional surveys for species that later change status through application of the Species Review Process, is a practical and rational approach that strikes a reasonable balance.

82. Comment: The Agencies should ensure Survey Protocols are designed to allow completion of survey requirements within the specified 5-year timeframe.

Response: The 5-year timeframe comes from the Agencies’ recognition that the strategic surveys are the cornerstone of management for some Survey and Manage categories. The description of strategic surveys in Chapter 2 has been expanded in the Final SEIS to include more detail. Options for strategic survey design and identification of responsibility levels within the Agencies have been included. One of the objectives of this SEIS is to reorganize Survey and Manage into categories based on information about the species. This makes it easier to see the importance of strategic surveys for specific species and to design objective-oriented strategic surveys that are cost efficient and meet specific information needs. As a result of this increased clarity, staffing and funding for strategic surveys has already been increased and strategic surveys for most species began during the 2000 field season.

83. Comment: Survey Protocols are still not written for 187 species, in spite of the requirement to start surveys by 1996.

Response: Table 2-1 in the Draft SEIS mistakenly gave the impression that Survey Protocols were needed for 274 species. This table has been edited to show the Survey Protocols referred to are only for the 87 species requiring surveys prior to habitat-disturbing activities (pre-disturbance surveys). Pre-disturbance Survey Protocols are already prepared for every species that will continue to require practical pre-disturbance surveys in the action alternatives. Existing survey requirements for these species will continue without interruption regardless of which alternative is selected for implementation.

Requirements for strategic surveys will be displayed primarily in the Strategic Survey Plan and many strategic survey actions will benefit numerous species at the same time. Strategic Survey Protocols may be developed for some species and these should not be confused with Survey Protocols for pre-disturbance surveys.

84. Comment: The Agencies should address survey staff training requirements and standards to assure that quality survey projects will be completed.

Response: This and related comments have been passed along to Agency personnel responsible for training and monitoring. Incidences of misidentification and other survey difficulties are known to the specialists and the data in ISMS is used accordingly. This need for the Species Review Process panel to consider the origin and likely accuracy of the data is one reason for not using rigid numerical criteria to assign species to categories or remove them from Survey and Manage.

85. Comment: Requiring verified vouchers before a “known site” is valid (as has been the

practice in some cases) may lead to loss of populations. For some species, collection itself may lead to unnecessary and unacceptable impacts. Alternate means of verification should be used.

Response: Collection of very rare taxa is a concern. If collection of a voucher specimen would have a detrimental impact to the local population, then other methods may be used to verify if a species is extant at a site. If occurrence of a Survey and Manage species is suspected, then appropriate action will be taken to confirm its presence and to provide for its persistence at the site. This SEIS does not require that voucher specimens be collected to have valid known sites.

Pre-disturbance Surveys

86. Comment: The Agencies should be allowed more time for training and protocol development before they are required to complete pre-disturbance surveys.

Response: Survey Protocols and agency survey expertise are available for all species included in the No-Action Alternative for which surveys are practical; pre-disturbance surveys for these species will continue uninterrupted into the selected alternative. Grace periods are specified for newly added species and these periods are believed to be adequate, while providing for optimum species management as soon as is reasonable. Survey techniques will, no doubt, be developed for additional species in the future and they will be reassigned to categories requiring pre-disturbance surveys at that time.

87. Comment: The timing of pre-disturbance surveys should be reconsidered.

Response: Several options were considered when describing the timing requirements for application of the Survey and Manage Standards and Guidelines, including using the interpretation of the Northwest Forest Plan language offered the U.S. District Court for the Western District of Washington. Application of the survey requirements prior to completing the project-level NEPA decision is the most appropriate because decision-makers are required by law to make informed decisions about the design of activities, based on having gathered all appropriate information. Applying pre-disturbance surveys and resultant known site management (and the potentially significant effect on project design) after a decision has been made would either necessitate an amended NEPA decision or changes to project design that were not visible to the public. If these were federally listed species or unreplaceable historic sites, resultant project redesign might be appropriate. For the Survey and Manage mitigation measure, a timing date more consistent with existing planning processes is appropriate. Species such as slugs, snails, lichens, moss, and fungi (the vast majority of the Survey and Manage species) do not rapidly establish new sites. If surveys do not locate these species during the planning stages of the project, it is not likely that they will move into the site between the date of the decision and the actual on-the-ground activity. For most species on Survey and Manage this would be true even if it has been several years between these events. It is more cost-effective and efficient to conduct these surveys during the planning stages of the project, so that the project design can accommodate any actual locations of these species, rather than wait until field work begins or contracts are awarded before finding if any of these species are present. The standards and guidelines in Chapter 2 make clear that surveys and determination of known sites to manage will occur before the site-specific NEPA decision is signed. The effects discussions included in Chapter 3&4 of this Final SEIS reflect this interpretation.

88. Comment: The Agencies should develop more efficient and flexible survey designs based on the similarity of ecological niches among many of the Survey and Manage species.

Response: This approach is already being used and is being incorporated into new or revised Survey Protocols to the extent possible. Certainly, a single taxa specialist should be looking for all members of a taxa during a single survey, at least those that occupy similar habitats. Survey Protocols need to be well enough coordinated to facilitate this efficiency. This was not the case when some of the first Survey Protocols were written. However, it is sometimes not possible to write a protocol for a large group of species. For example, narrowing transect spacing to

accommodate the one hardest-to-find species would be fine if all administrative units had this hard-to-find species. If they do not, using a standardized multi-species protocol would not be efficient. In some cases, it is up to the local unit to combine protocols based on the species that may occur in the proposed activity area and the expertise of their individual surveyors.

89. Comment: The Agencies should clarify the rationale for survey requirements outside late-successional and old-growth forests.

Response: Although the Survey and Manage species are, by definition, closely associated with late-successional forests, some of them occur at potentially important, albeit lesser, rates in early-successional forests. In many cases these forests contain elements of the previous late-successional stands, such as large snags or large rotten logs, that serve as the habitat for these species. Language has been revised in this Final SEIS to permit Survey Protocols to identify conditions not needing surveys including "...seral stages, stand age, stand complexity, or stand origin, where occupied sites, if present, are likely incidental, non-viable, or otherwise not important for meeting overall species persistence objectives." Also, the determination of whether the proposed activity might be "habitat-disturbing" considers the nature of the activity as well as the conditions in the area where the activity will take place.

90. Comment: The SEIS "practicality" screen is not consistent with the Northwest Forest Plan requirement to "thoroughly search" and Judge Dwyer's ruling that nothing in the Northwest Forest Plan allows exemption of pre-disturbance surveys.

Response: The current Northwest Forest Plan language (see Appendix B of this SEIS) requires a thorough search for Component 2 species and, then, goes on to state Component 3 is recommended if species characteristics make (Component 2) surveys "difficult." The current language also permits moving a species from one component to another as experience is acquired with these requirements. Clearly, these additional phrases indicate that such surveys should be practical and the action alternatives in this SEIS establish a definition of "practical" to clarify this point. This intent is now clearly displayed in Alternatives 1 and 2. This new language serves as the basis for effects described in Chapter 3&4, all of which will be considered by the decision-makers. These clarifications would make the Northwest Forest Plan consistent with what the Agencies consider appropriate management for these species. Judge Dwyer did not make a general pronouncement that no exemptions are allowed in the Northwest Forest Plan or that there is any law which would prohibit the Northwest Forest Plan from exempting surveys which are impractical. To the contrary, Judge Dwyer signed a stipulated order which provided some relief from impractical pre-disturbance survey requirements.

Strategic Surveys

91. Comment: The Agencies should improve the accuracy of data collection and analysis in the strategic survey process.

Response: This comment has been passed along to Agency personnel responsible for training and implementation of the strategic survey process.

92. Comment: Strategic surveys cannot focus on habitat at highest risk because so little is known about these species that all habitat should be surveyed.

Response: Strategic surveys take several forms depending upon the questions to be answered for each species. Part of the strategic survey design includes a systematic grid of plots to determine if particular species are present in habitats where they are not expected or if they are outside the currently identified range. In this way, some surveys will cover a statistical sample of all habitats, looking for all species.

References in the Draft SEIS to conducting strategic surveys in areas "at highest risk to loss" for Category 1B and 2B species were based on the assumption that, for most Survey and Manage

species, old-growth forests are a higher quality habitat than other late-successional forests. This led to the requirement to complete strategic surveys within a province before NEPA decisions or decision documents are signed for habitat-disturbing activities in old-growth forests in year 2006 (2011 for fungi) and beyond. In other words, strategic surveys must be completed for the physiographic province that encompasses the project area before signing the NEPA decision. Numerous comments indicated confusion with the “highest risk to loss” phrase; it has been rewritten.

93. Comment: The Agencies should adopt strategic surveys as the most cost-effective survey strategy.

Response: Strategic surveys are indeed the most cost-efficient way to gather most of the information needed about Survey and Manage species. For many types of information, in fact, they are the only way to gather that information. A good example is measuring the strength of the late-successional forest relationship. A hundred sites in late-successional forests discovered through pre-disturbance surveys does not mean anything about late-successional forest relationships if surveys have been limited to late-successional forests. The emphasis placed on strategic surveys in the short term will affect overall Survey and Manage costs in the long term, because strategic survey information is, by far, the best way to gather information needed to assign species to the best categories or to focus pre-disturbance surveys (see Chapter 3&4, Effects Assumptions sections). Pre-disturbance surveys are designed for one purpose, to minimize the inadvertent loss of undiscovered sites through management activities. While pre-disturbance surveys have, in some cases, supplied enough information to make category assignments, they are an inefficient way to gather information for that purpose.

94. Comment: The Agencies should include field representatives when planning strategic surveys.

Response: The Agencies are including field representatives. Currently, the Agencies are designing strategic surveys for the next 3 years, as well as gathering information for the Strategic Survey Plan. The group doing this work includes Regional Office staff and managers, taxa specialists, and Survey and Manage coordinators from field units.

95. Comment: The Strategic Survey Plan should include definition, adequate detail, and an implementation schedule.

Response: The discussion of strategic surveys has been expanded in Chapter 2 of the Final SEIS. This discussion includes a requirement for a Strategic Survey Plan to be developed at the range-wide scale and generally be updated annually. The Strategic Survey Plan will include the following four elements, by species or taxa group:

1. A summary of the information needs proposed to be answered by the strategic survey.
2. The benefits expected by answering each identified need, either in terms of increased assurance of species persistence or reduced costs or impacts.
3. Identification of the method or methods that would best answer the proposed question.
4. Relative priorities or priority-setting criteria.

96. Comment: The SEIS supports the 10-year delay in strategic surveys by saying only 2.5 to 4 percent of the old growth will be logged, but they do not say what percent of the Matrix old growth will be logged. A summary of U.S. Fish and Wildlife Service incidental takes since 1995 indicates all old growth in the Matrix will be liquidated in 30 years, removing one-third before strategic surveys are required.

Response: As noted in the Draft SEIS, the 2.5 to 4 percent of late-successional forest to be “modified” in the first decade includes prescribed fire (more than 1 percent of this total), a potentially habitat-disturbing activity that does not reduce the amount of old growth, since a primary goal of this activity will be to reduce understory accumulated fuels. Since 14 percent of

the late-successional forest is in the Matrix, and much of the area for these activities is in Matrix (certain prescribed fires being the primary exception), this translates to about 15 to 25 percent of the late-successional forests in the Matrix being “modified” in the first decade. It is important to note that strategic surveys are under way, and that there is a 5-year completion requirement for 33 species in Category 1B that, in part, has given the Agencies an incentive to complete all such surveys in that time.

U.S. Fish and Wildlife Service “take” numbers need careful interpretation. Agency project planners often describe effects on a larger planning area rather than the actual project area since programmatic consultation occurs early in the project planning process, prior to the identification of the precise project location. Actual acreage that the project affects is usually less, and is often substantially less, than the acres associated with take of owls during the programmatic consultation. Therefore, the actual take of owls, and the acres of late-successional forest associated with that take, are less than indicated during consultation.

97. Comment: The strategic survey schedule requirements should be revised, both to provide reasonable protection for the species and to get species removed from Survey and Manage, if appropriate.

Response: This is, in effect, what has happened in this Final SEIS. The schedules in the Draft SEIS were set to provide for species needs. Category 1B and 2B species require completion within 5 years (10 years for fungi) for activities in old growth to continue. Other start dates have been removed because current progress on strategic surveys (see Background on Implementation of the Standards and Guidelines 1994-2000 section in Chapter 2) makes such start dates moot. In addition to the meeting the 5 and 10-year completion dates for Category 1B and 2B and other species needs, the Agencies have incentives driven by a desire to reduce the number of species on Survey and Manage in order to reduce costs and unnecessary effects on management activities. This factor will ensure surveys are conducted for uncommon species in a timely manner, since those are the species most likely to be removed from Survey and Manage. Another factor that contributes to completing strategic surveys sooner rather than later is that surveys for taxa groups will often be lumped together, resulting in all surveys being completed on the fastest schedule within the group. Finally, the Agencies intend to complete strategic surveys, at least to the degree that survey needs can be identified from current information, sooner than the schedules describe.

98. Comment: The Agencies should complete ecological studies related to the specific habitat needs of Survey and Manage species. Based on these studies, the Agencies should determine what, if any, mitigation measures are needed.

Response: The purpose behind Strategic Surveys is to gather additional information at the landscape, population, or site-specific scale to address the need to manage for a reasonable assurance of species persistence. Information provided by strategic surveys (as well as research and other information-gathering efforts) will help address fundamental questions of Survey and Manage species, including: is there a concern for persistence? is the species rare or uncommon? what is the appropriate management for the species? and, do the reserve land allocations and other standards and guidelines of the Northwest Forest Plan provide a reasonable assurance of species persistence? The Agencies will utilize this information to determine how and where to apply the management elements of Survey and Manage, and what, if any, additional measures are needed (subject to appropriate NEPA analysis).

99. Comment: The Draft SEIS, as written, is based on the premise that by identifying where species occur on the landscape, protection can be afforded by providing habitat buffers. The critical question of whether this mitigation effort is sufficient for persistence should be answered with a more proactive adaptive management/research approach. Alternatives to field surveys, i.e. genetic studies, should be considered for providing population biology data needed to make viability determinations. Surveys need to be carried out in a research framework that provides not only presence/absence data, but key population biology data (demographic factors, relative abundance, effective population size, etc.) that can be used to make inferences about population viability.

Response: As noted in the Background section in Chapter 3&4, other elements of the Northwest Forest Plan provide for an ecosystem approach to management of species. This approach serves as the backbone of the overall Northwest Forest Plan strategy. The Survey and Manage Standards and Guidelines are a mitigation measure added to the preferred alternative in the Northwest Forest Plan Final SEIS to improve the distribution and stability of certain species across federally managed lands, and/or to decrease the likelihood of extirpation of these species from federally managed lands in the Northwest Forest Plan area. The Survey and Manage Standards do not work independently, but rather work together with other elements of the Northwest Forest Plan to meet persistence objectives. Compliance with persistence objectives cannot be attributed to any single standard and guideline. All of these species are benefitted by other elements of the Northwest Forest Plan, such as late-successional and riparian reserves, and many are beneficiaries of other mitigation measures as well.

As a mitigation measure Survey and Manage does three things: (1) it manages species sites where found; (2) it provides for pre-disturbance surveys where practical; and (3) it provides for strategic surveys to improve the efficiency of the previous two items and provide information for the adaptive management process. These elements are deemed practicable and implementable for mitigation. No assumption is made that the Survey and Manage mitigation measure precludes genetic studies, research, and so forth. The Agencies have made a reasonable effort to identify information gaps on these species and have developed a reasonable strategy to proceed in the face of that unknown information.

The Northwest Forest Plan also includes an adaptive management process to incorporate what is learned as actions are implemented. To require genetic and/or demographic studies to be completed on the hundreds and perhaps thousands of individual species which may be found within the Northwest Forest Plan area before proceeding with any habitat alteration under the Northwest Forest Plan is impractical and unnecessary. This mitigation measure was adopted to reduce the risk of proceeding in the face of unknown information, including information that could only be obtained by conducting time-consuming and expensive genetic and/or demographic studies on every single species on Survey and Manage. As such information becomes available over time, the Northwest Forest Plan's adaptive management process will allow incorporation of such relevant new information into the management requirements for these species. In the meantime, the Northwest Forest Plan is a conservative approach to managing this habitat.

That said, studies will be conducted by the Agencies in monitoring the effectiveness of the overall Northwest Forest Plan strategy and of certain elements of the strategy as appropriate. See discussion in the Monitoring section in Chapter 2. Further, there are similarities between the information needs suggested by the commenter and the information that will be gathered for some species through strategic surveys. In most cases, however, the criteria in Chapter 2 indicating whether there is a concern for persistence will be obtained through pre-disturbance and strategic surveys. Survey information is expected to help determine if other elements of the Northwest Forest Plan provide reasonable assurance of persistence. The concern for persistence criteria are basically the original criteria used to place species in Survey and Manage in the Northwest Forest Plan. These criteria will be used to place species on, or remove species from, Survey and Manage in the future.

Survey and Manage can fulfill its intended role as a mitigation measure to the otherwise ecosystem approach of the Northwest Forest Plan, without needing demographics or other "proofs" of species persistence before proposed changes under this mitigation measure are made. If, for example, through these surveys, some of these species are found to be persisting in abundance in reserved habitats or are not affected by habitat alteration, it would not be necessary to know everything which could be known about the species through genetic studies or long-term demographic studies before proceeding with the management of the federal lands under the Northwest Forest Plan. Some of these species are on Survey and Manage primarily because little is known about them. If strategic surveys find these species in equal abundance in late-successional habitats as well as in recently cut-over areas, it is reasonable to conclude that there is no need to keep such species on Survey and Manage. Conducting a demographic study on such a

species would not provide the agency with any information relevant to an environmental concern. This is not to say that the Agencies will never conduct any genetic or demographic studies. The Agencies may choose to conduct such studies in situations where there is some reasonable expectation that such studies would yield relevant information important to a management decision.

Management Recommendations

100. Comment: Management Recommendations should be included in the Draft SEIS.

Response: As noted in Table 2-1, there are 263 completed Management Recommendations and 7 more in progress. They are too voluminous to include in the SEIS. Management Recommendations are available upon request or on the internet at www.or.blm.gov/surveyandmanage. The Management Recommendations for the standards and guidelines are the technical application, and are not part of, the standards and guidelines. Management Recommendations are subject to revision as information from strategic surveys and other sources indicate a need.

101. Comment: Management Recommendations should be based upon scientifically-defensible guidelines.

Response: Management Recommendations are developed by taxa experts and land managers. They are based on the Northwest Forest Plan Final SEIS Appendix J2, appropriate literature, information from the ISMS database, the Species Review Process, strategic surveys, professional judgment, and other information as appropriate. They are subject to review by the REO "...to ensure they identify and integrate the habitat or life-history factors key to managing the species to the level of protection intended in the standards and guidelines."

102. Comment: Strategic surveys should be completed prior to the development of individual species Management Recommendations.

Response: Strategic surveys do not need to be completed in order to develop Management Recommendations. Management Recommendations that describe the habitat parameters to maintain known sites are already written for most species. They were developed using information that is already available. In addition, these documents are necessary to apply the "manage known sites" element of the alternatives. Management Recommendations will be updated as additional information indicates a need. These modifications, including the identification of high-priority sites, will only occur as the information to support these updates becomes available. Strategic surveys will usually be the best, but not necessarily the only, source of this kind of information.

103. Comment: Protection of known sites should not be dropped until site-specific NEPA analysis shows that buffers are not needed for other resource concerns, such as green tree retention.

Response: The NEPA analysis to determine if known site management is necessary for Survey and Manage species is being conducted through this SEIS. If known sites contribute to other resource objectives, such as green tree retention, through double counting, they would continue to be managed to meet those requirements.

104. Comment: The Agencies should better define professional judgment in the manage known sites exemption process.

Response: The requirement for "professional judgment" in biological decision-making infers being able to show that a reasoned decision was made with appropriate, scientifically credible information. This should include, as needed, information about the species from the Northwest Forest Plan Final SEIS, Appendix J2, more recent literature, and information about the species, its

known locations, and its status. Analysis of this information will typically involve professional biologists or related journey-level specialists familiar with the species' ecology and management needs, in consultation with regional-level taxa specialists. Requests for exemptions and exceptions to managing known sites must include an analysis of available pertinent information and use professional judgment, as appropriate, to interpret available information. Although the exact nature of the information needed may differ somewhat depending on the situation, experience over the past 6 years with REO review of Late-Successional Reserve Assessments and other REO review requirements indicates that if there is insufficient information to support the request, it will not be found to be consistent with the standards and guidelines.

105. Comment: Best Management Practices should be developed for all species assigned to categories that do not require pre-disturbance surveys.

Response: In effect, assigning 86 percent of all federal late-successional stands in reserves, requiring green tree retention on many Matrix acres, placing due dates for strategic surveys in old growth for Categories 1B and 2B, and managing known sites are best management practices. Given the percentage of potential habitat likely to be affected during the next 5 to 10 years and the fact that Survey and Manage is a mitigation measure that is designed to preserve the current distribution and stability of certain species, these steps are considered adequate to meet the objectives of the Northwest Forest Plan.

106. Comment: The Agencies should provide a more adequate definition of site than that found in the glossary.

Response: The definition of site has been expanded in the glossary to distinguish between occupied sites and known sites, including buffers, as described in Management Recommendations. An occupied site is a detection point or polygon surrounding several detection points. The Management Recommendation document described in Chapter 2 indicates, in most cases, that some sort of buffer be applied around an occupied site to ensure persistence of the species at that site. The manage known sites direction in these standards and guidelines covers the occupied site and the buffer. Thus, most references within this document to sites, particularly if used in the context of a managed site, or a species for which management of known sites is required, refer to the occupied site with the buffer.

107. Comment: The Management Recommendations for species should include further clarification of high-priority sites and criteria for their evaluation and management.

Response: Management Recommendations, developed by taxa experts and land managers, will address high-priority sites for "uncommon" species. High-priority sites will only be designated for species when it has been determined that all sites are not needed in order to provide a reasonable assurance of persistence. Parameters used to identify sites may include quality of habitat, robustness of individual populations, density of populations (so many per unit of land area or arrangement so as to provide interaction and connectivity), or other parameters indicated by the needs and identified concerns for that particular species. Sources of information leading to such designations will include the records from the Species Review Process, where particular concerns or strengths leading to the category assignment are discussed.

The Agencies felt sufficient information was available about the "uncommon" species that an additional method to identify high-priority sites has been added in the Final SEIS. If a Management Recommendation has not yet been prepared identifying high-priority sites, then local determinations of non-high-priority sites may be made on a case-by-case basis with: (1) guidance from the Interagency Survey and Manage Program Manager; (2) local interagency concurrence (FS, BLM, FWS); (3) documented consideration of the condition of the species on other administrative units as identified by the Program Manager, typically adjacent units as well as others in the species range within the province; and, (4) identification in ISMS. The Survey and Manage Program Manager will involve appropriate taxa specialists.

108. Comment: The Agencies should retain the centralized authority to determine what habitat-disturbing activities require surveys.

Response: The Survey Protocols will provide the guidance in this area, particularly since they will specifically address habitat conditions or areas where surveys are not needed even though potential habitat is present. These documents must be reviewed by the REO “...to ensure they identify and integrate the habitat or life-history factors key to managing the species to the level of protection intended in the standards and guidelines.” However, each habitat and each proposed activity is different and it is appropriate to permit local line officers to make the final decision regarding whether a proposed activity is potentially habitat-disturbing.

109. Comment: The REO and the RIEC have too much latitude to exempt or delegate the decision-making process without review.

Response: The provision for the REO to develop criteria to exempt certain documents or processes from review is the same as the Northwest Forest Plan ROD requirement for REO review of silvicultural activities in Late-Successional Reserves. In practice, when the REO has reviewed enough similar actions to be able to describe the elements that made the proposal satisfactory, they exempt from review further activities meeting these same elements. This approach allows the REO, after experience with actual activity proposals, to better describe objectives or desired future conditions than could be described in these standards and guidelines at this time.

The discussion of the REO and RIEC review process in Chapter 2 has been expanded in the Final SEIS. It should be noted that the REO does not make “decisions” that are, by statute, the responsibility of each agency to make (see Northwest Forest Plan ROD, p. 58). The REO does make findings of consistency with the standards and guidelines and the Agencies have committed to complying with these interpretations. The provision for RIEC to delegate review of the annual species review process to the REO director has been removed.

110. Comment: The Agencies should develop alternate review strategies if the Regional Ecosystem Office is eliminated in the future.

Response: The participation of the REO is described in numerous places throughout the Northwest Forest Plan. If the REO was to be eliminated in the future, there would be more review strategies to be developed than just those described in this SEIS. In the absence of any proposals to eliminate the REO, developing alternate review strategies would be speculative at this time.

111. Comment: There needs to be more detail about the criteria applied in Management Recommendations to designate high-priority sites and how, or if, the public will be involved in their preparation.

Response: Of 346 species proposed to remain on Survey and Manage, the manage high-priority sites direction applies only to 24 species in Alternatives 1 and 3 (none in Alternative 2). These are species for which known sites are concentrated in some areas beyond the number needed to provide a reasonable assurance of persistence. They remain on Survey and Manage typically because there are large gaps in their known distribution that will most likely disappear as additional surveys are conducted in these areas. The risks to the species of removing special site management from a portion of known sites is very low.

The standards and guidelines in Chapter 2 have been clarified. Management Recommendations “are developed by taxa experts and land managers (at any administrative level) for use at field offices of the BLM and Forest Service. Because these documents describe site management, and for uncommon species, identify sites not needed to provide a reasonable assurance of persistence, they are subject to review by the REO. This review is to ensure they identify and integrate the habitat or life-history factors key to managing the species to the level of protection intended in the standards and guidelines.” Developing or modifying Management Recommendations constitutes administrative changes to the technical details of specific site management; it is not anticipated

that such changes will require any further NEPA documentation. They will continue to be available on the internet and comments to them, or to other aspects of Survey and Manage, are invited through the Survey and Manage Program Manager.

112. Comment: The Agencies should incorporate effects on nonfederal lands when preparing Management Recommendations.

Response: Where it is known that populations or habitat will be maintained on nonfederal lands, such influences should be considered as appropriate. Except for the Habitat Conservation Plans and other changes described in the Cumulative Impacts section the beginning of Chapter 3&4, the assumptions about habitat on private land continues as described in the 1994 Northwest Forest Plan Final SEIS that there is little or no contribution because the timing and rate of harvest of adjacent habitat is unknown. However, many of the Survey and Manage species are rare endemics and are included specifically because significant portions of the total population may occur on Matrix lands proposed for harvest or other habitat-disturbing activities. For many of these species, effects or populations on private lands have little effect on the need to maintain the species on federally managed lands. A review of Habitat Conservation Plans that apply within the range of the northern spotted owl was completed during the preparation of the Cumulative Impacts section of this Final SEIS. The results of this review have supported the assumptions from the Northwest Forest Plan Final SEIS that Habitat Conservation Plans may provide some inadvertent but unquantifiable benefits to Survey and Manage species, but few specific measures are targeted at mitigation of impacts to these species. Furthermore, inadvertent management of Survey and Manage species on nonfederal lands would not result in changes to the anticipated effects or expected outcomes from federal actions.

Alternatives

Range of Alternatives

113. Comment: The Agencies should evaluate other alternatives in the event strategic surveys are not funded.

Response: For the species where strategic surveys are most important, the 222 species in Categories 1B and 2B, the standards and guidelines preclude habitat-disturbing activities in old growth from proceeding in any province where strategic surveys are not completed within 5 years or where equivalent-effort surveys are not done. Failure to conduct strategic surveys also means that the information needed to remove species from Survey and Manage, such as knowing whether the species is adequately represented in reserves, is not generally available. This results in continued pre-disturbance survey costs and greater impacts to other activities. The clarifications of objectives and effects resulting from analysis for this SEIS have substantially heightened management's awareness of the value of these surveys, and the funding devoted to them has been substantially increased.

114. Comment: The Agencies should draft a new alternative delaying implementation of the revised standards and guidelines until Survey Protocols are finalized.

Response: Nearly all of the species requiring pre-disturbance surveys in the preferred alternative already require pre-disturbance surveys in the No-Action Alternative, and Survey Protocols for these species are written. For species that would begin requiring pre-disturbance surveys as a result of category assignments proposed in one or more of the action alternatives, there is a grace period to allow time to prepare protocols before conducting surveys.

115. Comment: The range of alternatives presented in the Draft SEIS is inadequate: there is no rationale presented for the buffer widths in each alternative and there is too much difference between no known site buffers in Alternative 1 and 250-meter buffers in Alternative 3.

Response: The Management Recommendations (see Chapter 2, Provisions Common to Alternatives 1, 2, and 3 section) “describe the habitat parameters that will provide for a reasonable likelihood of persistence of the taxon at [the] site.” These Management Recommendations describe the conditions or parameters that must be maintained within the occupied site. For Alternatives 1 and 2, field personnel match these described needs to the conditions at each site, within the context of the surrounding geography and forest conditions, to determine the size of buffer at each site. Experience with this same approach in the No-Action Alternative is that buffers typically range from 2 acres to 160 acres, depending upon the species and conditions at the site. The known site buffers for Alternative 3 build upon work by Chen et. al. (1995), indicating that edge effects (to microclimate) sometimes extend greater than 240 meters into old-growth stands from the edge of clearcuts. Although all sites are not bordered by clearcuts, and all species do not require totally pristine microclimate, Alternative 3 standardizes buffer widths at 250 meters for “rare” species. This width is only prescribed for the “rare” species, which currently account for less than one-fourth of the currently known sites of Survey and Manage species. A reference to this rationale for the buffer widths has been added to the Introduction to the Action Alternatives section of Chapter 2 in the Final SEIS.

116. Comment: The range of alternatives is inadequate; there is too much of a gap between Alternatives 1 and 3.

Response: Alternative 1 is designed to provide a level of management equal to the Northwest Forest Plan, to the extent practicable. Alternative 3 is designed to provide minimal risk to these species. The intent was to provide a clear opportunity to see the effects of a wide range of approaches to the management of these species, while still meeting the described Purpose and Need. Where there is a significant difference between the level of protection provided by Alternative 1 for certain species and that provided by Alternative 3, the effects discussions generally explain what aspect of Alternative 3 provides the additional protection. The decision-makers may decide to choose a blended or mitigated alternative as a result of this discussion.

117. Comment: The range of alternatives presented in the Draft SEIS is too narrow.

Response: As identified in The Underlying Need for the Proposed Action section in Chapter 1 of this SEIS, the problems identified for the Survey and Manage and related standards and guidelines center around unclear, overlapping, or unnecessary (given species persistence objectives) direction. This is a very narrow need and, thus, the range of alternatives is appropriately narrow. The Survey and Manage Standards and Guidelines have not been applied or monitored long enough to make any broader conclusion about their adequacy or effectiveness. Additional time is needed to give the current approach a chance to work. Broader consideration of the Survey and Manage Standards and Guidelines would require reconsideration of their role in the overall Northwest Forest Plan and potentially a reconsideration of other elements of that plan. Nothing so far in the Agencies’ experience with the Survey and Manage mitigation measure indicates that there is a need for reconsideration of other elements of the Northwest Forest Plan at this time.

118. Comment: The alternatives do not provide sufficient protection for all species. For example, two bryophytes receive “enough” mitigation under Alternative 3, but not Alternative 1. Alternative 1 should include more protection.

Response: Alternative 1 is designed to provide a level of management equal to the Northwest Forest Plan, to the extent practicable. All of the alternatives direct certain management actions for managing species and the environmental consequences of those actions are described in Chapter 3&4. Species outcomes, by alternative, are displayed on Table 2-13. The decision-makers will examine the differences between the alternatives. As a result, they may consider adding additional mitigation for certain species, or they may limit their selection based on what is practicable. There is no defined minimum level of protection that meets the Purpose statement and the applicable regulations, agency interpretation, and practicality will be part of the decision. Adjusting the alternatives so they all provide equal levels of protection would reduce the range of alternatives available to the decision-makers.

Common to All Action Alternatives

119. Comment: Does the Draft SEIS phrase “or close to the Northwest Forest Plan area” mean the planning area for the Northwest Forest Plan is expanding?

Response: No. If a Survey and Manage species is known to occur close to the Northwest Forest Plan area, it does not mean that the Survey and Manage or other Northwest Forest Plan Standards and Guidelines would be applied to that site. The phrase is used in conjunction with “and have potentially suitable habitat within the Northwest Forest Plan area” to describe a species that might appropriately be on Survey and Manage even though no sites are known within the Northwest Forest Plan area at this time. If future strategic surveys or other new information indicates the species is unlikely to be in the Northwest Forest Plan area, the species will be removed from Survey and Manage.

120. Comment: The Agencies should curtail the discretionary latitude given to their employees in the Survey and Manage process.

Response: The judgment and interpretations required to implement various management steps, from writing Survey Protocols to determining if an activity is potentially habitat-disturbing, are made in the context of the parameters or sideboards described in these standards and guidelines. Key decisions having implications to many sites, including the results of the annual Species Review Process, Management Recommendations, Survey Protocols, and the Strategic Survey Plan, are subject to review by the REO or the RIEC. The Agencies’ taxa specialists, some with Ph.D.s working for agency research branches, are among the most knowledgeable about the group of species on Survey and Manage. The types of professional decisions expected to be made by agency staff and line officers are no different in Survey and Manage than the other decisions these employees make on a regular basis. The management processes and steps for Survey and Manage are now better described, including better descriptions of when and where “professional judgment” should be used.

121. Comment: The Agencies should better justify the concern for persistence criteria and include quantification methods.

Response: The endemic nature, irregular distribution, fragmentation of habitat, varying levels of surveys, and other factors make the development and application of strict criteria difficult. There is considerable doubt as to whether such criteria could better or more uniformly determine levels of concern. Using the indicators of a concern for persistence is guided by the overarching question of whether the reserves or other elements of the Northwest Forest Plan provide a reasonable assurance of persistence. The indicators, or criteria, are professionally applied by persons with the appropriate biological background to meet the specific Survey and Manage Standards and Guidelines. It is understood by the species review panel, for example, that 100 species sites found through random, statistically designed surveys represent substantially different information than 100 sites found through pre-disturbance surveys. Such qualifications apply to each of the criteria and apply to each species differently depending upon their particular level and basis for concern as identified in the Northwest Forest Plan Final SEIS, Appendix J2, this SEIS, and the most recent scientific literature about each species. Development of more rigid criteria would necessarily restrict the use of certain types of new information, just because they did not fit the required format. For species where so little is known, this would be an unfortunate restriction on the use of new data. Although the criteria may appear to be non-specific, in practice, these criteria are the best way to approach decisions for this particular set of species.

122. Comment: The Survey and Manage criteria for persistence should be rewritten to include full consideration of threats from all sources rather than only those from management activities.

Response: Threats, and for that matter, recovery efforts, from all known sources were considered in the development of the Northwest Forest Plan. This same information and any newly acquired information was considered in this Final SEIS to set the context for making species assignment

decisions. Similarly, the species review process recognizes that reserves and other standards and guidelines emphasize late-successional forest associated species management on over 86 percent of the habitat for these species. Threats to known sites that occur in Matrix land allocations (or some other grouping of sites) will not keep a species on Survey and Manage, if it is determined the reserves or other elements of the Northwest Forest Plan will meet species persistence objectives.

123. Comment: The change from a “high likelihood” to a “reasonable assurance” of persistence requirement is inappropriate.

Response: The “high likelihood” phrase applies to the reliability of pre-disturbance surveys for Protection Buffer species. There is no similar standard stated for Survey and Manage, but it is likely to have been intended differently. The Protection Buffer species were included in the original Option 9, as land allocations. Survey and Manage was added as a mitigation measure, with pre-disturbance surveys prescribed for species for which such surveys were not deemed “difficult” (Northwest Forest Plan ROD, p. C-5). The “practical” criteria for the combined standards and guidelines applicable to the action alternatives in this SEIS are designed so that a reasonable effort is likely to determine the presence of a species on a specific area. A primary purpose of this SEIS is to eliminate this type of confusing double standard. The proposed change to the standards and guidelines is reasonable.

The phrase “reasonable assurance of persistence” refers to the persistence objective for this SEIS as described in Chapter 2. Persistence objectives are adapted from the Northwest Forest Plan ROD (p. 44). In the Northwest Forest Plan ROD, there is no requirement that the Survey and Manage mitigation measure provide a “high likelihood” of viability. The Northwest Forest Plan ROD (p. 44) sets the standard used in this SEIS of meeting the NFMA viability provision for vertebrates and meeting “...a similar standard with respect to non-vertebrate species to the extent practicable.” “Practicable” is carried from the Northwest Forest Plan ROD into the need statement for this SEIS.

124. Comment: The basic criteria for inclusion in Survey and Manage should be the same as that used by FEMAT and the Northwest Forest Plan.

Response: The three Basic Criteria for Survey and Manage were developed in response to the Purpose stated in Chapter 1 of this SEIS, to clarify language, to eliminate inconsistent and redundant direction, and to establish a process that responds to new information. Establishing the three basic criteria is essential because they clarify why species should be removed or added to Survey and Manage. These criteria are based on and similar to the criteria that were used to place species in Survey and Manage in the first place, with few exceptions as noted below. Use of the same criteria as used in the Northwest Forest Plan would be impossible without reconvening the FEMAT panels. The three basic criteria are:

1. *The species must occur within the Northwest Forest Plan area or occur close to the Northwest Forest Plan area and have potentially suitable habitat within the Northwest Forest Plan area.* FEMAT intended to use this criteria, however, some species were inadvertently included that did not exist here. One species included is known only in Wyoming. Clearly, inclusion here would not help this species because the Record of Decision for this action will only amend land and resource management plans within the Northwest Forest Plan area. Another species closest known location is Mt. Lassen National Park. In this case, the species is included because similar habitat occurs nearby, within the Northwest Forest Plan area.
2. *The species must be closely associated with late-successional or old-growth forests.* The need for the Northwest Forest Plan was based on the systematic and planned continuance by the Agencies to reduce the amount of late-successional forests on federally managed lands through timber harvest. The northern spotted owl was listed as threatened under the Endanger Species Act, for example, not because the loss of the next owl would cause a population collapse, but because there were plans and

practices in place at the time that it appeared would reduce interconnected large blocks of habitat below levels needed to sustain a healthy, interactive population at some point in the future. Species originally identified by FEMAT for consideration in the Northwest Forest Plan were ones for which there was this similar concern of dwindling late-successional and old-growth habitat.

Early to mid-successional forest associated species, while potentially at some risk to disturbance of individual sites, are, by definition, not at the same risk as late-successional forest associated species. Early to mid-successional species habitats are not in decline, particularly when compared to historic levels on and off federally managed lands. In this context, the only element of risk these species share with late-successional species is the possibility of being disturbed by a management activity. In these cases, existing programs like the Agencies' special status species programs are appropriate to provide necessary management. The 22 species proposed for removal from Survey and Manage in the action alternatives because they are not associated with late-successional and old-growth forests are being considered for inclusion in these alternate programs.

3. *The reserve system and other standards and guidelines of the Northwest Forest Plan do not appear to provide for a reasonable assurance of species persistence.* For the 1,120 or so species considered by FEMAT, a panel of taxon experts gave long-term distribution ratings to 7 of the 10 FEMAT options. As described in Appendix J2 of the Northwest Forest Plan Final SEIS, some species, estimated to have less than 80 percent probability that the land allocations and other standards and guidelines of each alternative would at least meet "habitat is of sufficient quality, distribution, and abundance to allow the species population to stabilize, but with significant gaps in the historic species distribution on federal land...", were considered for additional mitigation measures. As described in Appendix J2 of the Northwest Forest Plan Final SEIS and summarized in Chapter 2 of this SEIS, Survey and Manage was ultimately adopted as one of the mitigation measures resulting from that process. Clearly, the third basic criteria in this SEIS is an accurate restatement of the criteria that was initially used to place species into Survey and Manage. Since the Northwest Forest Plan is first an ecosystem management plan, it would be inappropriate to include in Survey and Manage any species adequately provided for by other elements of this plan.

Potential questions around this third criteria exist regarding what level of certainty should be required. The criteria under Concern for Persistence, and the corresponding criteria indicating when there is not a concern for persistence, guide the annual Species Review Process in determining whether the other elements of the Northwest Forest Plan are adequate for the species before the species is removed from Survey and Manage. The criteria to add new species to Survey and Manage is exactly the same. Published taxonomic entities meeting the three basic criteria may be added to Survey and Manage as part of the annual species review process.

Another issue is species considered and ranked by FEMAT, and included in Survey and Manage, but the threat to species distribution or stability is outside the control of the Agencies implementing the Northwest Forest Plan. If Survey and Manage would at least help such species, they were left on. If Survey and Manage provides no benefits, the species is removed.

The Northwest Forest Plan Survey and Manage Standards and Guidelines at page C-6 state that species should be removed when their "...status is determined to be more secure than originally projected." There are no criteria included in the Northwest Forest Plan to help make this judgment. The three basic criteria described in this Final SEIS, and the associated criteria defining when there is a concern for persistence, appear to duplicate the judgments intended by the original authors of the Northwest Forest Plan. The three basic criteria work well as a standard to judge if species should or should not continue to be included in Survey and Manage.

125. Comment: Standards for species inclusion in the "surveys not practical" category are not justified or accurate.

Response: The Agencies have identified criteria that must be met for pre-disturbance surveys to be considered “practical” (see Chapter 2). Pre-disturbance surveys are considered not practical if any *one* of those reasons do not apply. By “not practical,” the Agencies do not mean to imply impossible, only that it is not likely that a reasonable effort would determine the presence of the species on a specific area. The Agencies have determined that strategic surveys, which focus on acquiring information on specific habitat associations, growth cycles, and other characteristics of the species, should be an effective and more efficient method of defining habitat characteristics, locating potential habitat, and detecting species sites. For some species, the extreme difficulty of identification and few available facilities and trained specialists suggest that survey efforts are better expended under systematic and more focused strategic searches than through relatively random pre-disturbance surveys. For some species, surveys are considered impractical due to concerns for human safety, such as for lichens that grow high in large, old-growth trees, where climbing would be required in order to examine specimens for identification.

126. Comment: The Agencies should reconsider the provision to eliminate survey requirements for species simply because taxonomic classification has not been completed.

Response: No “species” are being removed from Survey and Manage because they are not published taxonomic entities. The requirement for taxonomic classification applies only to species, or taxa, being considered for addition to Survey and Manage in the future. Since the land management agencies are generally not mandated to research and describe new species classifications, using published species as a criteria is logical. Without published descriptions, elements of Survey and Manage, such as management of known sites, become difficult to define. Note that the use of “species” in this context applies to taxa, which may include subspecies, groups, or guilds. The provision to add species to Survey and Manage in the future is unique to the action alternatives; there is no provision to add species in the No-Action Alternative.

127. Comment: Species should be removed from Survey and Manage if they are not taxonomic entities now. If they have not been published in the 6 years since the Northwest Forest Plan was adopted, they probably will not be.

Response: The unpublished “species” included in the Northwest Forest Plan have proven to be identifiable and pre-disturbance surveys and management of known sites is under way. Species included in Survey and Manage that have proven to be mislabeled as other, more common, species have been removed from Survey and Manage. If the unpublished species turn out to be other species, they will be combined during the Species Review Process and removed if appropriate.

128. Comment: Recreation should be considered a habitat-disturbing activity.

Response: Determining whether a proposed activity, including recreation, is habitat-disturbing is based on the individual activity. Survey Protocols contain criteria that provide guidance when determining whether an activity is habitat disturbing. Application of the survey requirements to habitat-disturbing activities as defined in Chapter 2 provides substantial benefits without unnecessarily and unreasonably restricting other forest uses that might occasionally and incidentally harm a Survey and Manage species.

The Survey and Manage mitigation measure was designed to add confidence that the Northwest Forest Plan will continue to meet species persistence objectives. Survey and Manage was not designed to ensure that every possible site is protected from every possible disturbance.

129. Comment: Survey and Manage provisions should not apply to thinnings designed to accelerate the development of late-successional forests.

Response: Although species on Survey and Manage are anticipated to be closely associated with late-successional forests, some sites important to a species’ overall stability, connectivity, or other life needs might be located in stands less than 80 years old that contain structural or functional

characteristics derived from late-successional forest that occupied the site prior to the current forest stand. This could be especially true for species dependent upon remnant large snags or down logs from a previous old-growth stand. In stands in Matrix or within the North Coast Range Adaptive Management Area, thinning could occur in stands greater than 80 years of age that have developed some characteristics of late-successional forest habitat. Since thinning could alter this habitat, it would be prudent to survey for potentially rare species in their suspected habitat and consider potential impacts, especially for those species for which available information about their habitat associations is limited.

However, some elements in the standards and guidelines of the action alternatives are intended to address the situation where such sites do not need to be managed. First, clear identification of “closely associated with late-successional forests” as a Survey and Manage basic criteria, and strategic surveys conducted specifically to test the relationship (or dependence) of the species on late-successional forests, should result in the removal from Survey and Manage species not closely associated with late-successional forests. Second, whereas the No-Action Alternative required surveys for, and management of, sites wherever they were likely to occur, provisions have been added to the action alternatives that “pre-disturbance Survey Protocols should also identify habitat conditions or locations, or criteria for identifying such conditions locally, where surveys are not needed for a reasonable assurance of persistence. Such habitat may include, but not be limited to, seral stages, stand age, stand complexity, or stand origin, where occupied sites, if present, are likely incidental, non-viable, or otherwise not important for meeting overall species persistence objectives” and “Management Recommendations may also identify areas where it is no longer necessary to continue surveys prior to habitat-disturbing activities or strategic surveys for the taxon” under their charter to “provide guidance to Agency efforts in conserving Survey and Manage species.” Finally, “for ‘uncommon’ species, Survey Protocols should specify habitats or conditions not needing surveys because ‘high-priority’ sites are not expected.” For some species, Survey Protocols or Management Recommendations may define high-priority sites based, where appropriate, on stand age or seral stage. None of these factors eliminate the need to survey mid-successional stands, but rather clarify the needs to survey and manage such stands for many species.

130. Comment: Routine maintenance activities should be included in activities that require pre-disturbance surveys.

Response: Routine maintenance activities occur in areas that already have some type of development (i.e. road, campground, trail, dam). If a species that is closely associated with late-successional forests, incidentally occurs in some type of developed area, it would likely represent elements of a population that is not crucial to meeting persistence objectives. If such sites were crucial, it raises questions about the dependence on late-successional forests. Finally, sites such as earth-fill dams, campgrounds, etc., must be maintained for health, safety, and legal reasons. Requiring surveys in these circumstances is not necessary to meet species objectives, conflicts with legally required actions, or simply represents poor stewardship of existing infrastructure and investment. The implications of this standard and guideline, like all others described in Chapter 2, were considered in the effects discussions included in Chapter 3&4 of this SEIS.

131. Comment: Pre-disturbance surveys should be required for all Survey and Manage species.

Response: Pre-disturbance surveys are clearance surveys designed to minimize the inadvertent loss of undiscovered sites. They are tremendously expensive in terms of cost, obligation of agency expertise, and impacts to activity planning efforts. Where characteristics of the species prevent such surveys from consistently finding sites, Agency resources can be better spent conducting strategic surveys to find some sites and determine the management needs of the species. This approach is similar to that used to assign species in different components in the first place, and is used in Alternatives 1 and 2. All alternative therefore require strategic surveys for all species. Alternative 3 also requires pre-disturbance surveys for almost all species. The resultant increase in costs as well as the increase in species protection is discussed in the effects sections in Chapter 3&4 and will be considered by the decision-makers when selecting an alternative.

132. Comment: Prescribed burning activities should not be included in habitat-disturbing activities.

Response: The Final SEIS has been revised to suggest that the appropriateness of prescribed fire be specifically addressed in the Management Recommendations for each species. Prescribed natural fire in Wilderness has been excluded from the pre-disturbance surveys requirement, and similar fires in backcountry and Late-Successional Reserves are excluded from such surveys with REO review. Also, an explanation that prescribed fire may not always be a habitat-disturbing activity is included in Chapter 2, separating prescribed fire from the general discussion about timber harvest. No general exclusion of prescribed fire has been included, however, because prescribed fire could have a substantial negative effect to some species at particular sites.

133. Comment: The SEIS should provide examples of habitat-disturbing activities. Salvage logging, pesticide spraying, and fertilizer applications should be included, and line officers should not have the latitude to arbitrarily decide.

Response: Salvage, pesticide and fertilizer applications, restoration projects, thinning, trail construction, and other activities may be habitat-disturbing. Management Recommendations describe the habitat parameters that must be maintained for each species. Survey Protocols identify conditions or areas where sites may occur (see Survey Protocols in Chapter 2). If a proposed activity is likely to have a significant negative impact to the habitat or life requirements of the species, it triggers the survey requirement. This standard, included in Chapter 2 of this Final SEIS under Habitat-Disturbing Activities and used by the Agencies as administrative direction since November 1, 1996, must be applied on a site and activity-specific basis. Actual application of surveys depends on a variety of site-specific factors including the type of habitat potentially affected, the nature of the predicted effect, and the species in whose range the activity may occur. For example, if a wildfire creates an early-seral condition that is no longer habitat, surveys may not be appropriate. For these reasons, the standards and guidelines cannot identify particular activities that are always habitat disturbing. Each habitat and each proposed activity is different, and it is appropriate to permit local line officers to make the final decision regarding whether a proposed activity is potentially habitat-disturbing.

134. Comment: The initial selection process for Survey and Manage species should be discussed in detail.

Response: The initial selection process for Survey and Manage species is briefly discussed in the Background on Origin of Standards and Guidelines section in Chapter 2. As noted in Chapter 2, the initial selection process is discussed in detail in the 1994 Northwest Forest Plan Final SEIS Appendix J2, to which the analysis in this SEIS is tiered. Appendix J2 is available upon request.

135. Comment: The criteria for determining relative rarity are inadequate and the categories are incomplete.

Response: There are currently over 400 species on Survey and Manage because of uncertainty, endemism, small population sizes, association with scarce habitats, and impacts of previous management. Further, information about these species comes from a variety of sources and each source has its own level of confidence and applicability. This complexity makes strict application of numerical or other criteria inappropriate. The Species Review Process considers the interaction of the criteria in the context of the Northwest Forest Plan system of reserves and other standards and guidelines, the likelihood of future disturbance, the origin of the data, the advice of taxa experts, and other factors to arrive at a decision regarding reasonable assurance of persistence. Strict criteria were considered and determined to be unworkable given the variability of the circumstances for each species and the persistence objectives of the Northwest Forest Plan as mitigated with Survey and Manage.

136. Comment: The management guidelines for “rare” species have been unacceptably weakened in all the alternatives by permitting exceptions to management of known sites.

Response: This exception permits a reasoned consideration in cases of greater public good or where another location for a needed activity would likely cause even more concern. Survey and Manage species are not “endangered” and the risk that an exception will lead to significant problems is low. Requests for exceptions will address this risk and be forwarded to the REO for review.

137. Comment: The provision to manage only high-priority sites is an arbitrary and unmanageable weakening of the Survey and Manage provisions.

Response: The concept behind “manage high-priority sites,” which is unique to the action alternatives, is that there are species (24 of the 346 proposed to remain on Survey and Manage) for which there are enough sites in some areas of the Matrix to preclude the need to continue to manage them all. This provision eliminates the requirement to manage sites in high density areas, while keeping the species on Survey and Manage because of low numbers of known sites in other areas. It provides a way to reduce the impacts to activities or reduce the high costs of surveys in areas where the species is well represented and local population stability is not in question. This provision does not apply to rare species, so the risk of this strategy is limited. Most sites not retained will result from application of Management Recommendations developed by taxa experts and land managers and reviewed by the REO.

138. Comment: Human disturbance should include all activities, not just extractive uses.

Response: Habitat-disturbing activities that trigger pre-disturbance surveys for Survey and Manage species are discussed in Chapter 2 of the Final SEIS, and include a variety of activities, not just extractive uses.

139. Comment: Species now requiring pre-disturbance surveys should not be removed from Survey and Manage.

Response: In the action alternatives, species are proposed for removal because they do not meet the three basic criteria for Survey and Manage. The species review process found that 63 species, and 9 others for part of their range, no longer need to be included in Survey and Manage because they are not closely associated with late-successional forests, are not found within the Northwest Forest Plan area, or other elements of the Northwest Forest Plan provide a reasonable assurance of persistence. These species are proposed for removal in all three action alternatives. The need to conduct pre-disturbance surveys is not a criteria for retaining a species on, or removing a species from, the Survey and Manage Standards and Guidelines. However, some species currently requiring pre-disturbance surveys are proposed for removal, in part, because such surveys found them to be more than common than originally envisioned.

140. Comment: The Agencies should consider all known sites for Survey and Manage species to be high priority unless scientific evidence demonstrates otherwise.

Response: The species for which the standards and guidelines permit identification and management of “high-priority sites” are sufficiently numerous or other factors contribute to a lower level of concern for persistence. For these species, all sites must be managed until either the Management Recommendation, written by experts and reviewed by the REO, or carefully considered case-by-case decisions, identifies sites not needing management. In both cases, these are decisions considering the latest scientific evidence and the status of populations in the province.

141. Comment: The Agencies should resolve the problem of continuing to cut old growth in the Matrix before the reserves have grown back.

Response: Both the Matrix harvest rates and the expected ingrowth in reserves are adequately discussed in the Northwest Forest Plan SEIS and additional discussion of this topic is outside the scope of this SEIS. Figure 1-2 in the Draft SEIS gave the impression late-successional forest

totals were being reduced over time. This graphic has been corrected in the Final SEIS to show ingrowth.

142. Comment: What happens if you find a site after a decision notice is signed? I can see where an uncommon species might not need site management ,but you should at least modify the decision to manage sites for rare species.

Response: Surveys need to be completed to locate most sites prior to the decision notice or other decision document. A standard and guideline has been added stating that sites of rare species found after the decision will typically be managed, but uncommon species will be dealt with on a case-by-case basis.

143. Comment: If species are to be considered for sensitive (special status) species programs, known sites should not be released for other resource activities until after this consideration is completed.

Response: As suggested, known sites for these species will continue to be managed until their disposition is clarified in the special status species consideration or other management process. Additional wording has been included in Chapter 2.

144. Comment: The Final SEIS should describe how species being removed from Survey and Manage, but still of concern, would be protected until they are placed under another program.

Response: The Final SEIS better describes interim measures to protect those species. Chapter 2 has been changed to show these species are either on, or are currently being considered for, the Agencies' special status species programs. Further, a statement has been added that known sites for these species will continue to be managed until a determination is made regarding application to these programs. The likelihood these species may not qualify, and why, is also explained. If a species does not qualify, it is because the level of information or the level of concern required to be included in the Agencies' special status species programs is different than for Survey and Manage. The resultant level of management will still meet viability and other applicable regulations. It is important to note that the Northwest Forest Plan focus on late-successional species originated because of a pre-1993 systematic and scheduled reduction in the amount of late-successional forests on federally managed lands. Although there are potential disturbance risks for 22 early to mid-successional species, these risks do not include the continued, range-wide reduction of habitat.

145. Comment: The Agencies should justify why individual arthropod species are excluded from consideration in the Survey and Manage Standards and Guidelines.

Response: Arthropods were analyzed by FEMAT and the Additional Species Analysis Team, as documented in the Northwest Forest Plan SEIS Appendix J2, as functional groups. The potential effects of fire on forest litter layers and on the four groups led to their inclusion in Survey and Manage. This inclusion should drive strategic surveys for these groups relative to this identified issue. Because of the extreme number and complex speciation of arthropods, particularly sub-surface arthropods, there is little evidence of individual species meeting the Survey and Manage basic criteria, i.e., needing the Survey and Manage measure to ensure stable populations. Further, inclusion of individual arthropod species would result in management that would likely not meet the "to the extent practicable" criteria in the Need statement.

146. Comment: The current proposal would make it easier to log 1 million acres of old growth and unacceptably increase risks for Survey and Manage species.

Response: None of the alternatives in this SEIS would increase the harvest of old growth above levels already projected in the 1994 Northwest Forest Plan. The nearly 1 million acres of late-successional and old-growth forest displayed in the document as potentially available for harvest was identified in the 1994 Northwest Forest Plan Final SEIS. It is that portion of the more than 8

million acres of such stands that is not needed to meet ecosystem, species, recreational, scenic, or other non-harvest management objectives. Further, that Final SEIS identifies that nearly 90 percent of the Northwest Forest Plan Probable Sale Quantity is dependent upon these acres. The current balance of late-successional forest in reserves versus being available for timber harvest is key to the balance sought by President Clinton when he established the Purpose and Need for the Northwest Forest Plan. In 1994, and again in this SEIS, species effects determinations are made with the understanding that these acres are subject to regulated timber harvest.

All alternatives were designed to clarify standards and guidelines and reduce duplication and inconsistencies from the current direction. Alternative 1 was designed to accomplish this while providing for the level of species protection intended in the 1994 Northwest Forest Plan. Alternatives 2 and 3 provide slightly different levels of management, but all action alternatives keep the basic elements of Survey and Manage, as described in the Northwest Forest Plan, intact.

147. Comment: The Agencies should address the flaw in the Draft SEIS which allows harvest of old-growth forests within the 5-year window when strategic surveys are not required.

Response: Strategic surveys have already begun and information from those surveys will be used to make appropriate changes to category assignments at least annually, and to make changes to Survey Protocols and Management Recommendations as appropriate. Surveys will continue so that the 5-year date will be met. It is recognized that the identified start-up periods could result in the inadvertent loss of some undiscovered sites. However, the risk to overall species persistence objectives remains low for two reasons. First, the risk of disturbing sites is low because only 2.5 to 4 percent of late-successional forests are proposed for activities in the next decade, half this amount in the next 5 years. Second, other elements of the Northwest Forest Plan, notably the 86 percent of the late-successional forests now in reserves and the additional retention of the 15 percent oldest and largest trees per cutting unit, already retains most habitat. These reserves are the primary building block for the Northwest Forest Plan and Survey and Manage was provided as a mitigation measure to the basic plan. Partly because of this, 80 percent of the Survey and Manage species never had a requirement for pre-disturbance surveys; and, there was no expectation that activities would stop while other types of surveys were completed. This SEIS continues this approach, and the potential to lose undiscovered sites is considered in the effects determinations included in Chapter 3&4.

148. Comment: Riparian species should be managed similarly to terrestrial Survey and Manage species or they should be included until studies ensure riparian management is adequate.

Response: Survey and Manage is a mitigation measure applied to the Northwest Forest Plan system of reserves and other standards and guidelines. The Northwest Forest Plan was designed to provide an ecosystem approach to management of late-successional forest associated species. Where the strategy was deemed to provide for species, for example where the needs of riparian-dependent species are provided by elements of the Aquatic Conservation Strategy, the species should not be included in Survey and Manage. If evidence is presented demonstrating the reserves are not adequate for some species and this mitigation measure would benefit the species, the Agencies can consider adding it to Survey and Manage in the future (according to standards and guidelines in the action alternatives only).

149. Comment: The Final SEIS should clarify, if removed, Survey and Manage species can later be reinstated.

Response: Species removed from Survey and Manage can later be added as new information indicates. Decisions to remove should be sufficiently considered that such reinstatements will be unusual, but new information could lead to a species being re-added to Survey and Manage. This potentiality was demonstrated between the Draft SEIS and the Final SEIS. When rerunning the Step 3 process, new information led to a few species being returned to Survey and Manage, at least for part of their range, in the Final SEIS. These species are discussed at the end of Appendix F.

Monitoring

150. Comment: A program to evaluate the success of Management Recommendations should be developed and implemented.

Response: Determining whether sites managed according to Management Recommendations actually provide for persistence of the taxon at the site is expected to be part of effectiveness monitoring.

151. Comment: The Agencies should use LIDAR and other remote sensing technology to document the amount and condition of northwest forest ecosystems.

Response: Light Detection and Ranging (LIDAR) remote sensing applications are mostly associated with atmospheric chemistry. The Agencies are currently using remote sensing technology to document stand conditions as part of the effectiveness monitoring process.

152. Comment: The Agencies should make a clear distinction between monitoring and strategic survey programs.

Response: The Strategic Survey description in Chapter 2 has been expanded and includes a description of the process for identifying what the specific strategic objectives (questions to be answered) are for each species. The definition of when a strategic survey is completed has been expanded to include "...and information is sufficient to conclude that existing or resultant management direction will provide a reasonable assurance of persistence." Surveys will not be needed if, for example, a species is in Category 1A and obvious rarity shows it should always be in Category 1A. The Monitoring section in Chapter 2 has also been expanded and the possibility of building monitoring on information gathered during strategic surveys is noted. With the large amount of information expected to be gathered through strategic and other surveys, some overlap or connection between strategic surveys and monitoring is likely.

153. Comment: Monitoring effectiveness programs should be included in the Survey and Manage EIS to evaluate the effects of adaptive management and disturbance activities.

Response: The Monitoring section in Chapter 2 has been expanded to describe the link to other Northwest Forest Plan effectiveness monitoring and to identify how and when additional approaches may need to be developed to deal with individual species. This section also describes how information from strategic surveys can provide baseline and background information.

154. Comment: The Agencies should require the completion of monitoring studies as required by the Northwest Forest Plan prior to permitting any management activities.

Response: The Northwest Forest Plan was designed to meet persistence objectives for Survey and Manage and other species while continuing to conduct certain management activities. Monitoring is to take place as part of the implementation of the entire plan. The expanded Monitoring section in Chapter 2 addresses application of that strategy.

Implementation monitoring began in 1996 and continues to show a high level of compliance with Northwest Forest Plan Standards and Guidelines, including those for Survey and Manage. Effectiveness monitoring for Survey and Manage species is being included in Northwest Forest Plan biodiversity monitoring currently being designed. The revised Monitoring section in Chapter 2 describes that more species-specific monitoring may need to be designed for species too rare to be covered in the biodiversity monitoring design. Considerable new information has been gathered for about half of the Survey and Manage species through pre-disturbance, extensive, and general regional surveys. This information has been compiled into central databases (generally ISMS, see Appendix D) and has been reviewed twice by the Species Review Process. Finally, it is acknowledged that there is not yet significant new information upon which to judge the effectiveness of Survey and Manage or other elements of the Northwest Forest Plan for many

species. This SEIS generally does not propose to change direction for those species (except in cases where review of the information available to the FEMAT lead the Agencies to different conclusions). This SEIS proposes primarily to reorganize existing Standards and Guidelines more efficiently to eliminate confusion and duplication. It also proposes to remove species from Survey and Manage or reduce management levels for some species, but only in those cases where new information clearly justifies that proposal.

155. Comment: Monitoring plans for Survey and Manage Standards and Guidelines do not yet exist and should be drafted.

Response: Implementation monitoring has been conducted for application of all standards and guidelines in the Northwest Forest Plan for the past 3 years. Standards and guidelines changed as a result of selection of one of the action alternatives in this SEIS would be incorporated into that monitoring effort immediately. Other types of monitoring are underway in the Northwest Forest Plan area. For example, effectiveness monitoring to track changes in late-successional and old-growth forests over time is taking place. Survey and Manage species are being specifically addressed in the biodiversity monitoring module currently being designed. These are longer term monitoring efforts, and implementing such efforts before the application of the Survey and Manage Standards and Guidelines has had a chance to make an identifiable difference to species, would be premature. Strategic surveys required by the standards and guidelines will gather information that could be incorporated into baseline conditions for some species and used in future effectiveness monitoring.

No-Action Alternative

156. Comment: The No-Action Alternative in the Draft SEIS is not adequate and should be rewritten.

Response: When updating a land and resource management plan where ongoing programs will continue, even as new plans are developed, the “no-action” alternative” is the “no-change” from current management direction. Consequently, this allows the projected effects of the action alternatives to be compared to those effects projected for the existing plan. The No-Action Alternative identified in this SEIS is the existing direction in the Northwest Forest Plan. This meets the requirements of NEPA for the No-Action Alternative.

157. Comment: The No-Action Alternative leaves in place conflicting management direction and should not be selected.

Response: The Council on Environmental Quality (CEQ) regulations (40 CFR 1500 - 1508) require that the No-Action Alternative be described to provide a point from which to quantify and compare the effects of the action alternatives. It will be up to the decision-makers to examine the components and effects of all four alternatives, in the context of the Purpose and Need discussion in Chapter 1, and make a reasoned choice among the alternatives.

158. Comment: Discussion of the Survey and Manage categories of the No-Action Alternative should include the number of species assigned to each group and identify which species are not practical for pre-disturbance surveys.

Response: The number of species in each category has been added to the Final SEIS. An analysis of Table 2-2 permits the reader to determine most of the Category 2 species where pre-disturbance surveys are considered not practical. If the No-Action Alternative column contains a “2” or “PB” (Protection Buffer), and Alternative 1 shows a 1B or 1D, pre-disturbance surveys are not practical (unless footnoted otherwise). If Alternative 1 shows a 1A or 1C, pre-disturbance surveys for those species are practical.

159. Comment: “Rarity Unknown” species should be assigned to the more conservative 1E category rather than being left in Category 1F without management of known sites.

Response: If there was a question between rare and uncommon, the more conservative assignment to rare was used. The “rarity unknown” label was only applied to species for which there was a question between uncommon and removing them from Survey and Manage completely. This label has been changed in Chapter 2 and in Appendix F of the Final SEIS to read “concern for persistence unknown,” since the concern for persistence criteria describes the lower limits of the uncommon categories. Additional language has been added to the Introduction to the Action Alternatives section of Chapter 2 to explain the split between these two categories.

160. Comment: The Agencies should clarify what is being returned to the “underlying or appropriate surrounding land allocation” in the first paragraph under Protection Buffers on page 47 of the Draft SEIS.

Response: This paragraph has been rewritten to clarify that it is the unmapped Late-Successional Reserve or Managed Late-Successional Area designation associated with the species site that is removed. The site itself continues to be managed according to the Northwest Forest Plan direction for the species unless a revised Management Recommendation, or assignment to a different species category, changes it.

Alternative 1

161. Comment: The Agencies should explain how surveys in Category 1B will “minimize inadvertent loss of undiscovered sites.”

Response: That was an error. The phrase has been removed from the strategic survey direction in Categories 1B and 2B. A comparison of the relative benefits and limitations of pre-disturbance versus strategic surveys has been added to the Effects Assumptions Relating to the Action Alternatives section in Chapter 3&4.

162. Comment: The Agencies should justify the premise that Alternative 1 should be the preferred alternative because it provides the best balance between ecological and financial commitment.

Response: The explanation of the preferred alternative is expanded in this Final SEIS. Alternative 1, consistent with the Purpose and Need, is designed to provide increased clarity of the standards and guidelines and correct assignments of species to categories so they can be managed to meet the persistence objectives intended by the Northwest Forest Plan while reducing unnecessary effects to other management activities. Success in achieving these objectives can be seen in part by the increase in PSQ as compared to the No-Action Alternative. The 1994 Northwest Forest Plan Final SEIS indicated that Survey and Manage added uncertainty regarding 1994 PSQ estimates, and the action alternatives in this SEIS do not eliminate all of the experienced PSQ effect of Survey and Manage.

163. Comment: The Agencies should reconsider the practicality of Alternative 1 based on the survey expenses.

Response: While the total expected cost of the implementation of Survey and Manage in all alternatives is a concern to the Agencies, there are several reasons to consider Alternative 1 “practical.” First, past allocations are a poor indicator of an appropriate expenditure because pre-disturbance surveys have only recently been implemented for all species. Second, although Survey and Manage in Alternative 1 represents a sizeable portion of the overall sale preparation costs, this is not necessarily unreasonable or impractical. Finally, the Agencies have an opportunity to substantially reduce costs over the long term by completing strategic surveys quickly so that common species can be removed from Survey and Manage and so management direction for uncommon and rare species can be kept current with the best species information. Strategic surveys will, for instance, help identify habitats or conditions where pre-disturbance surveys are not needed. Overall, the alternatives increase efficiency and provide for timely adjustments to categories and surveys as soon as information about the species justifies such changes.

164. Comment: Category 1B management guidelines are confusing and inadequate. “General geographic area” is vague. Limiting activities solely to “not in old growth” does not completely protect these species. The order to “not adjust the sampling activity units” is alarming.

Response: The management direction for Category 1B has been revised and the requirement for completing strategic surveys before habitat-disturbing activities occur in old growth after a certain date has been clarified. In the draft SEIS, Category 1B contains the provision to not conduct habitat-disturbing activities in old growth if strategic surveys have not met at least one of four main completion criteria. The reference to “geographic area that encompasses the project area” within that provision received much public comment, primarily as requests for clarification of the intended landscape scale for “geographic area”. Much consideration has been given to the appropriate landscape scale on which to apply this provision. Several landscape scales were considered, from the site- or stand-specific, to the scale of the individual species distribution, to the entire range of the Northwest Forest Plan. These scales were rejected in favor of the physiographic province.

Scales similar in size to a typical project area were considered too small to be appropriate for addressing persistence objectives for Survey and Manage species. Scales that could be applied to individual species, such as the species’ geographic range, would create a complex set of overlapping landscapes resulting in unnecessarily burdensome analyses that would be difficult to interpret and implement. The scale of the Northwest Forest Plan area would merely duplicate the annual Species Review Process. In contrast, the physiographic province provides a scale that is appropriate to addressing pertinent species needs; encompasses habitats that (by the definition of physiographic province) are likely to encompass habitats that are similar and of importance to the species; have sufficient information to evaluate potential impacts of site-specific activities; and would encourage the coordination of a reasonable number of field units administering the provision. Hence, the description of Category 1B has been modified to include the physiographic province as the appropriate geographic area in which to apply this provision.

This provision requires that no habitat-disturbing activities proceed in old-growth forest (specifically identified as a subset of late-successional forest) if strategic surveys are not completed within the province. The limitation to old growth focuses retention on the highest quality potential habitat for Survey and Manage species. That is, old growth represents slightly less than half of the acres of late-successional forest habitat in non-reserve land allocations, but is assumed to have the highest likelihood of providing quality habitat for species associated with late-successional forest. If strategic surveys are not completed in a timely manner, habitat-disturbing activities could only occur in younger late-successional forest stands, unless equivalent-effort surveys are completed in old-growth portions of stands affected by habitat-disturbing activities. This provision is intended to partially buffer the impact on management activities without compromising the best potential habitat. This provision of the standard and guideline is intended to provide a balanced approach that protects habitat, provides incentives, and allows flexibility. The species effects displayed in Chapter 3&4 are written accordingly.

The Draft SEIS included the statement “Do not adjust the sampling intensity, repetitions, or design to include specific stands or proposed activity units because of this requirement.” This statement has been removed.

165. Comment: Category 1E management direction guidelines are inadequate. Pre-disturbance surveys should be required.

Response: There is uncertainty whether these species meet the three basic criteria for Survey and Manage and, in many cases, it is unknown how to survey for them. This is an interim category and species are assigned to other categories or removed from Survey and Manage as soon as additional information becomes available. The Species Review Process conducted between the Draft SEIS and the Final SEIS reduced the number of species in this category from 44 to 22; most of them moved to Category 1A or 1B. Strategic surveys will continue to provide information to assign these species to appropriate categories.

166. Comment: Category 1E should contain a provision that allows species to be added to this category. In many cases, the only way to obtain the information necessary to determine if the species are provided a reasonable assurance of persistence by the reserves and other elements of the Northwest Forest Plan would be through Survey and Manage.

Response: The standards and guidelines for the action alternatives now specify that species for which current information indicates there is a concern for persistence may be added to Survey and Manage in any category, except Category 2D. The restriction on placing species in Categories 1E and 1F has been removed.

167. Comment: The Agencies should extend known site management to Category 1F species.

Response: Although Category 1F is considered “Status Undetermined,” there is usually enough information to be able to distinguish between rare and uncommon based on reported number of sites. If only a few sites are known, a species would be in the corresponding rare category, Category 1E. Species falling in Category 1F are sufficiently numerous that inadvertent loss of sites between now and when long-term placement of the species is determined, is not a concern. The determination of how many sites is sufficient considers the level of effort made to date to locate sites. For most species in Category 1F, an adequate number of sites are known in spite of little or no survey effort. It is expected, or at least likely, that with additional effort, more sites will be located. Experience so far indicates the most likely next step for these species is removal from Survey and Manage.

168. Comment: The standards for protection of snag-dependent species should include provisions to protect residual overstory from harvest during thinnings.

Response: Retention of residual (scattered) overstory is already provided for by the green tree retention standard and guideline and the related need to provide snag recruitment trees.

169. Comment: Snag provisions in Alternative 1 need to clarify that snag requirements are cumulative and need to provide for other cavity nesters as well.

Response: The provisions for the four cavity-nesting birds has been clarified in the Final SEIS to better show it retains nearly all of the existing wording in the Northwest Forest Plan standards and guidelines, either as the standard and guideline or as the Management Recommendation. A sentence has been added pointing out that interpretation of the 100 percent potential population levels need to be based on appropriate new references as they become available. Provisions for other snag-dependent birds are provided in underlying land and resource management plans. The most current available research will be used to determine to what degree the requirements for these other species are met by these snags or whether additional snags are needed to meet these other species objectives.

170. Comment: The Agencies should select Alternative 1 for various reasons because it is:

- the best balance between ecosystem health and timber harvest;
- the best balance between ecological and financial commitment; and
- the most efficient and unified way to meet Northwest Forest Plan persistence objectives.

Response: These factors are displayed in the effects sections in Chapter 3&4 and summarized in Chapter 2. The decision-makers will consider these, and other, effects in the context of the Purpose and Need and existing laws, regulations, and policy, prior to making their decision.

171. Comment: Removing individual species from Survey and Manage is contrary to the FEMAT- identified need (p. II-34) that taxa groups should receive priority attention for study.

Response: The species covered by the Northwest Forest Plan Survey and Manage Standards and Guidelines includes species from the original FEMAT analysis. The analysis was based on the

limited knowledge and information available at that time. Information obtained through forest plan implementation would address questions about species relationships to late-successional forest management. Information that has been gathered from surveys, research, and other sources has clarified the role of the Northwest Forest Plan in managing for reasonable assurance for persistence of these species. Changes to species categories, and the proposal to remove some of these species from Survey and Manage, reflects our improved understanding of these species. This is consistent with Northwest Forest Plan intent as written on page C-6 of the ROD. In meeting the criteria to be included in different species categories, or removed from Survey and Manage, these species have a reasonable assurance of meeting persistence objectives throughout their range. By meeting this standard, they should continue to be an integral part of forest ecosystems.

Alternative 2

172. Comment: The introduction to Alternative 2 should include a list of the 53 species to be removed from Survey and Manage in 5 years.

Response: The species assigned to Category 2D in Alternative 2 are shown on Table 2-2. After conducting the Species Review Process again between the Draft SEIS and the Final SEIS, the total number of species is 44. It includes 16 fungi, 9 lichens, 2 bryophytes, 4 vertebrates, 4 mollusks, 5 vascular plants, and the 4 guilds of arthropods.

173. Comment: The introduction to Alternative 2 should better justify why the 53 species are to be removed from Survey and Manage.

Response: The introduction to Alternative 2 includes a theme statement based on an assumption that the group of uncommon species are those species that are most likely to be removed from Survey and Manage in the near future. Alternative 2 seeks to expedite removal by concentrating efforts on completing strategic surveys within 5 years. The effects discussions in Chapter 3&4 indicate whether this assumption is reasonable.

174. Comment: Category 2D species should be eligible for reclassification as rare as new information becomes available.

Response: Species were assigned to Category 2D because the current information does not indicate that these species are rare. The assumption in Alternative 2 is that rare species would likely qualify for the Agencies special status species programs and that these programs would provide a reasonable assurance of persistence.

175. Comment: The direction for Category 2D should continue to do pre-disturbance surveys and manage known sites.

Response: The suggested change would make Alternative 2 identical to Alternative 1. There was an assumption that since more than three-fourths of all of the known sites are for these few species, fixing known sites at current levels would be an acceptable risk. The Agencies' efforts could be devoted to completing strategic surveys quickly, in order to determine the best long-term management for these species. The accuracy of this risk assumption can only be determined by reviewing the effects discussions in Chapter 3&4.

176. Comment: The Agencies should select Alternative 2 for various reasons including:

- it is the most economically feasible;
- the three alternatives all meet species persistence objectives, there is no measurable difference in the way alternatives meet species persistence objectives or ecosystem function and, therefore, there is no justification for the added costs or greater reductions of PSQ of Alternatives 1 or 3;
- it supports those forests in compliance with the 1994 Record of Decision which

already has in place management tools providing reasonable assurance of species persistence;

- it is the most cost effective; and/or
- PSQ is closer to that projected in the 1994 Northwest Forest Plan SEIS, while decreasing unneeded protection for “uncommon” species.

Response: These factors are displayed in the effects sections in Chapter 3&4 and summarized in Chapter 2. The decision-makers will consider these, and other, effects in the context of the Purpose and Need and existing laws, regulations, and policy, and make their decision. There is a difference in the predicted stability and distribution of some species between the three alternatives, as well as differences in costs and PSQ. These effects are described in detail in Chapter 3&4, displayed on Table 2-13, and summarized on Table 2-12 and in the Summary. The decision-makers will examine predicted effects to species while also considering costs, effects on PSQ, effects to other Agencies’ programs, policy, other objectives relating to species management, and regulatory and other legal direction, when determining which alternative to select.

177. Comment: The Agencies should not select Alternative 2 for various reasons including because:

- it puts too many species and, thus, tribal resources at risk;
- it does not fulfill the requirements of the Northwest Forest Plan; and/or
- the survey timeline is too restrictive.

Response: See previous response. The decision-makers will consider these, and other, effects in the context of the Purpose and Need and existing laws, regulations, and policy, prior to making their decision.

Alternative 3

178. Comment: Alternative 3 should include six categories to distinguish survey requirements for each species more clearly.

Response: There is a gradation across the species regarding the practicality of surveys. For some “equivalent-effort” species, surveys may be successful nearly half the time while others may be successful less than 20 percent of the time. For all species in Categories 3A and 3B, however, the actual survey effort will be about the same and they will be done according to written Survey Protocols. For operational purposes, the distinction between the two groups is only needed to assess effects in this SEIS. In Alternative 3, the Species Review Process would not classify survey practicality.

179. Comment: Alternative 3 should include 250-meter buffers for all Category 3B amphibians because they are easily affected by off-site activities.

Response: The draft Management Recommendations do not specify a specific buffer width for these species, but buffers should be sufficient to provide for persistence of the species at the site. If these species are particularly sensitive, these needs should be identified in the Management Recommendation and an appropriate buffer applied.

180. Comments: The Agencies should select Alternative 3 for various reasons because it provides better effects to individual species. Conversely, Alternative 3 should not be selected because the effects to activities were so high and additional species protection is not needed.

Response: These factors are displayed in the effects sections in Chapter 3&4 and summarized in Chapter 2. The decision-makers will consider these effects in the context of the Purpose and Need and existing laws, regulations, and policy, and make their decision. There is a difference in stability and distribution for some species between the three alternatives, as well as differences in costs and PSQ. These effects are described in detail in Chapter 3&4, summarized in Chapter 2 and

the Summary, and displayed on Table 2-13. The decision-makers will examine predictions of species stability and distribution while also considering costs, effects on PSQ, effects on other Agencies programs, policy and other objectives relating to species management, and regulatory and other legal direction, when determining which alternative to select.

Alternatives Considered but Eliminated

181. Comment: To better ensure the success of the Survey and Manage mitigation measure, the Agencies should eliminate timber harvest and verify the persistence of late-successional and old-growth associated species in reserve allocations.

Response: The elimination of timber harvest is outside the scope of this SEIS.

182. Comment: The Agencies should adopt an alternative protecting all remaining old growth.

Response: An alternative that prohibits harvest of old growth is described in the Alternatives Considered But Eliminated From Detailed Study section of Chapter 2.

183. Comment: The Agencies should adopt an alternative protecting all roadless areas over 1,000 acres and all remaining old growth.

Response: Management direction for roadless areas is outside the scope of this SEIS. However, management direction for roadless areas is being examined through another process and is noted in the Cumulative Impacts section in Chapter 3&4. Prohibiting harvest of old-growth forests is discussed in the Alternatives Considered But Eliminated From Detailed Study section of Chapter 2. Survey and Manage is a part of the Northwest Forest Plan specifically to increase confidence that the Northwest Forest Plan would provide a reasonable assurance of persistence for rare or little known species. There is no demonstrated reason to expand the alternatives in this SEIS to include all old growth or all roadless areas in order for Survey and Manage to continue to meet this objective.

184. Comment: The Agencies should withdraw the Draft SEIS and issue a new Draft SEIS which includes the Citizens' Alternative for Old-Growth Logging.

Response: The Citizens' Alternative for Old-Growth Logging was examined for substantive comments. Those comments were considered and are described elsewhere in this appendix. The "Citizens' Alternative" closely resembles Alternative 1 in the 1994 Northwest Forest Plan Final SEIS. There is no need to reissue another Draft SEIS to consider this alternative, since it has already been addressed as part of the analysis underlying the decisions made on the Northwest Forest Plan.

While Survey and Manage has not been entirely implemented, the Agencies have had enough experience and new information to realize that changes would be needed in order to meet the purposes and needs of the Northwest Forest Plan. There has been no change in policy or administrative direction that has changed the ability of the Agencies to carry out this strategy. The keystone strategy of the Northwest Forest Plan is the system of reserves. The Survey and Manage Standards and Guidelines are one of eight mitigation measures adopted in the Northwest Forest Plan from Appendix J2 (1994 Northwest Forest Plan Final SEIS). All of the species included in Survey and Manage are afforded benefits from the reserve strategy, and most are also beneficiaries of other aspects of the Northwest Forest Plan, including other mitigation measures. This is not the sole, or even the principle, strategy for conserving these species. The primary concern addressed by the Survey and Manage mitigation measure is uncertainty caused by lack of information about these species. Given that 81 percent of the federal forest is in reserve, the Agencies expect that completion of the strategic surveys will indicate that reserves and other standards and guidelines provide for many of these species in the long term, and this mitigation measure will no longer be considered necessary for them.

185. Comment: The Agencies should prohibit logging of old growth until strategic surveys are completed.

Response: The proposal for an alternative delaying harvest of old growth until strategic surveys are completed is addressed in the Alternatives Considered But Eliminated From Detailed Study section of Chapter 2. The proposed action in this SEIS addresses difficulties identified with the implementation of the Survey and Manage mitigation measure and does not propose to remove the measure or change the mix of land allocations made in the Northwest Forest Plan.

186. Comments: The remaining old growth should be protected because:

- private producers rely little on federal timber and it is only a small portion of the timber processed by the wood products industry;
- the economy of the Pacific Northwest is flourishing and diversifying despite logging cutbacks;
- forests have a greater value;
- they are spiritual, aesthetic, and healing sanctuaries from urban sprawl, adding unique dimensions to the quality of life for this and future generations; and
- forests of the Northwest, especially old-growth areas, are a magnificent national heritage and should be protected.

Response: The subject of reserving additional old growth is addressed in the Alternatives Considered But Eliminated From Detailed Study section of Chapter 2. The 1994 Northwest Forest Plan Final SEIS included an alternative that reserved all remaining late-successional forests. The proposed action in this SEIS addresses difficulties identified with the implementation of the Survey and Manage mitigation measure and does not propose to remove the measure or change the mix of land allocations made in the Northwest Forest Plan. Reconsideration of the amount of old growth that should or should not be in reserves is outside the scope of this SEIS.

187. Comment: Protections provided by the President's roadless areas proposal should not be counteracted with new logging of old-growth forests.

Response: The subject of reserving additional old growth is addressed in the Alternatives Considered But Eliminated From Detailed Study section of Chapter 2. The 1994 Northwest Forest Plan Final SEIS included an alternative that reserved all remaining late-successional forests. The proposed action in this SEIS addresses difficulties with the implementation of the Survey and Manage mitigation measure and does not propose to remove the measure or change the mix of land allocations made in the Northwest Forest Plan. Reconsideration of the amount of old growth that should or should not be in reserves is outside the scope of this SEIS.

188. Comment: The SEIS should address an alternative that adjusts the Survey and Manage requirements to maintain the "balanced" harvest level established by the Northwest Forest Plan.

Response: An alternative that maintains the PSQ level described in the 1994 Northwest Forest Plan Final SEIS is included in the Alternatives Considered But Eliminated From Detailed Study section of Chapter 2.

189. Comment: The Agencies should preserve old-growth forests because of the economic value in preserving old growth: clean water, healthy fish and wildlife populations, tourism, and recreation.

Response: The Northwest Forest Plan and the underlying land and resource management plans for the individual administrative units in the Northwest Forest Plan area have addressed these items. The alternatives in this SEIS would amend the Survey and Manage and related standards and guidelines only and would not materially change the effects for any of the above resources from effects displayed in the 1994 Northwest Forest Plan Final SEIS.

190. Comment: The Agencies should preserve the scenic beauty of the Northwest.

Response: The land and resource management plans for each administrative unit specifically address maintenance of scenic resources. Where retention of those resources is compatible with some level of regularly scheduled timber harvest, those areas contribute to PSQ. Where scenic resources are deemed not compatible with timber harvest, those areas are shown in the Northwest Forest Plan as Administratively Withdrawn. Reconsideration of the standards and guidelines for maintaining scenic quality is outside the scope of this SEIS.

191. Comment: The Agencies should halt the harvest of old-growth forests because it is unprofitable for the Forest Service and subsidized by taxpayer dollars.

Response: Timber sales are sold to the highest bidder based on detailed stand management prescriptions. Which trees to harvest and other contract requirements are carefully specified by agency employees and contracts are administered by qualified on-the-ground specialists. Any cost allowances or pre-work by the government are available to all bidders and included in the advertisement, so the concept of government subsidies to timber companies is a myth. Further, the Agencies do not harvest timber to make a profit, but to provide wood products to meet U.S. demands in ways that are more environmentally friendly and better for the U.S. balance-of-trade than if our needs were met with imports or alternative products. However, a reconsideration of the relative costs or values associated with the level of harvest in mature, old-growth, or any other forests is outside the scope of this SEIS.

192. Comment: Old growth should not be cut, except as needed for forest health.

Response: The determination of the proportion of such lands to be reserved was made while considering other resource values derived from these federally managed lands, including the value of old growth. Individual unit land and resource management plans have considered the need for aesthetics, Wilderness, visual, and other recreational resources and specified management direction for some old-growth areas that precludes regularly scheduled timber harvest. The Northwest Forest Plan, with its focus on the needs of over 1,100 late-successional and old-growth associated species, considered the size, quality, and distribution of existing (and future) late-successional forests and specified an additional area to be managed for late-successional and old-growth characteristics. About 86 percent of the late-successional forest identified in the Northwest Forest Plan area is in reserves or otherwise withdrawn. Additional requirements for harvest units in the Matrix will result in the retention of approximately 15 percent of the forest remaining in those units, made up of small patches of the largest and oldest trees available. The late-successional forest remaining available for timber harvest is that area not designated for other management in the above two processes. In comparison to the portion that is reserved, the area subject to harvest is more likely to be in smaller, less functional fragments.

Portions of the forest land administered by the Forest Service and BLM have been managed for long-term sustained yield of timber and related products for several decades. A result of that management has been the creation of fast-growing plantations generally ranging in age from 0 to 50 or 60 years old. These stands are prevalent enough that a long-term yield could be achieved from them that is higher than the current PSQ for the Northwest Forest Plan, but only after about 30 more years when these stands become mature. Until that time, offering timber to meet the PSQ is dependent upon late-successional stands. In addition to providing the balance that President Clinton was seeking when he directed development of the Northwest Forest Plan, harvest in these stands maintains an even flow, supporting communities and industries that will be available to harvest the younger stands as they mature, and that are available to do commercial thinning, forest health, and other stand management treatments in the short term.

Finally, it is important to note that the amount of old growth on federally managed lands in the Northwest Forest Plan area is increasing two to three times faster than it is being harvested. The pie chart and numbers displayed in the Draft SEIS were designed to provide information about the likelihood of disturbing a species site for an endemic species located only in the Matrix. It was

not intended as a display of late-successional forest over time. This chart, and the discussion of late-successional forests in Chapter 3&4, have been modified to address this concern.

Chapter 3&4

Introduction/Background

193. Comment: The Agencies should analyze the potential risks to species moved from one survey category to another.

Response: The anticipated effects to species and taxa groups is identified in Chapter 3&4. Experts writing the species effects sections were provided all information that the Species Review Process used to place species into Survey and Manage categories or to remove species from Survey and Manage. These writers described the predicted stability, distribution, and uncertainties for all species based upon management included within each category. Experts did not evaluate effects to species from changes in category, per se, but did address effects to species for each alternative, including the No-Action Alternative, so the change resulting from a change in category is apparent. Whether or not it is practical to conduct pre-disturbance surveys for a species is an important criterion for assigning species in categories.

194. Comment: The relative risks to the persistence of individual species for each alternative should be better analyzed.

Response: The species effects sections in Chapter 3&4 have been restructured to clarify findings, the basis for those findings, and any uncertainty regarding those findings. The summary of effects section in Chapter 2 has been rewritten to more consistently show effects. Also, two new tables, Table 2-13 and 2-14, have been added to Chapter 2. Table 2-13 summarizes anticipated effects for all species and Table 2-14 provides a summary of species with outcomes that vary by alternative

195. Comment: The Agencies should clarify the requirement for species to be published taxonomic entities in order to be considered for future addition to Survey and Manage, while unpublished taxonomic entities would be retained on Survey and Manage.

Response: Some of the unpublished species on Survey and Manage in the original Northwest Forest Plan Final SEIS have been resolved since the release of the Northwest Forest Plan ROD. The Agencies continue to work on resolving issues for many of the remaining unpublished species. These species were placed under the Survey and Manage Standards and Guidelines by the Northwest Forest Plan and will remain under this management until the Species Review Process determines the reserves and other elements of the Northwest Forest Plan provide a reasonable assurance of persistence or they are no longer considered a separate species. All of the unpublished species currently on Survey and Manage have been reviewed through the Species Review Process and continue to meet the three basic criteria for management under the Survey and Manage Standards and Guidelines.

The decision to limit future additions to the Survey and Manage Standards and Guidelines to published species is based, in part, on the need to ensure there are published descriptions for use in survey and identification of the species. Otherwise, no records can be demonstrated to represent a particular taxon and future publication could devalue all agency records for the taxon to that point.

196. Comment: The Agencies should include state and private lands in their evaluation of the environmental effects of the proposed actions.

Response: The cumulative effect of reasonably foreseeable actions on adjacent lands was considered in the 1994 Northwest Forest Plan Final SEIS and continues to be considered here. Nonfederal lands are generally not considered as contributing to populations of Survey and

Manage species because there is no assurance management actions will not disrupt those populations, except in cases where Habitat Conservation Plans implement specific management strategies that directly or indirectly benefit Survey and Manage species. Some of the Survey and Manage species are relatively non-mobile endemics which benefit little from stands several miles away. For vertebrate species, the viability provision applies to each Forest Service administrative unit within the species range.

The Cumulative Impacts section in Chapter 3&4 has been expanded to address nonfederal actions undertaken since 1994 and pending or reasonable foreseeable federal actions. New information collected since 1994 tends to confirm that nonfederal lands do not contribute significantly to the stability of Survey and Manage species. However, some nonfederal lands may incidentally contribute to the stability of these species through Habitat Conservation Plans prepared for listed species or through modifications to state forest practices acts. The cumulative effects analysis conducted during preparation of this Final SEIS included a review of Habitat Conservation Plans that have been completed within the range of the northern spotted owl. In this review, potential direct and inadvertent benefits that might accrue to Survey and Manage species are identified. This analysis concluded that some benefits could accrue to these species, mostly through the protection or restoration of older forest conditions and other habitat structural conditions, but these benefits were most often as a result of specific management measures implemented to meet other species (especially those listed under Endangered Species Act) goals.

197. Comment: Projected future habitat is not acceptable mitigation for the loss of current habitat.

Response: The changes in the amount and arrangement of late-successional forests over time was well analyzed in the Northwest Forest Plan Final SEIS. Projected future habitat is not being offered as “mitigation” for potential “losses” of Survey and Manage sites, although future late-successional ingrowth as described in the 1994 Northwest Forest Plan Final SEIS will certainly contribute to meeting persistence objectives for late-successional forest associated species at the ecosystem scale in the long term.

198. Comment: The Agencies should consider the effect of their management decisions on all types of activities that are economically dependent on the forest, not just timber harvest.

Response: The Agencies have considered the effects on all types of activities. The definition of habitat-disturbing activities in Chapter 2 is not limited to timber harvest or any other particular management activity. In Chapter 3&4, the SEIS described effects to management activities expected to be affected differently by the different alternatives. If activities are affected by Survey and Manage as described in the 1994 Northwest Forest Plan Final SEIS, and that effect differs little between the No-Action and the action alternatives, they may not be identified or discussed in this SEIS, because there is no change, and additional discussion will not contribute information for making a choice between the alternatives.

199. Comment: The Agencies should analyze the cumulative effects of eliminating the Protection Buffer Standards and Guidelines.

Response: Although Protection Buffers are “returned to their underlying or appropriate surrounding allocation,” the management direction applicable to these sites is not eliminated. The Protection Buffers were designed to serve single-species objectives. Management direction is retained as the “interim management direction” for these species until an updated Management Recommendation, using the best available science, is prepared. A primary reason for modifying the Protection Buffer Standards and Guidelines is because they are duplicative and redundant. There is no actual change in the management direction from what was intended in the Northwest Forest Plan unless the Management Recommendation is revised or the species is assigned to a different category. No cumulative effects examination beyond that included in this SEIS is needed.

200. Comment: The Agencies should conduct forest-by-forest analyses of the effects of the proposed alternatives.

Response: The new information indicating a need for this SEIS is not forest or district-specific. It applies throughout the Northwest Forest Plan area. The action alternatives will not distribute effects differently than would result from the No-Action Alternative except where species removal from Survey and Manage may affect one or more species with localized distributions. The information used to develop some of the effects, for example PSQ, is not so specific as to be identifiable at the scale of the individual administrative unit. For the scope of this decision, identification of more area-specific effects is neither possible or necessary. Effects at the individual administrative unit level will be more appropriately displayed when individual land and resource management plans are revised.

201. Comment: The Survey and Manage Standards and Guidelines are part of the Northwest Forest Plan and should be evaluated within the context of that Plan.

Response: This is, in fact, what has been done. The Survey and Manage and related mitigation measures were adopted in 1994 as an element of the Northwest Forest Plan. The measures work in concert with other elements of the Northwest Forest Plan. Survey and Manage by itself would not be expected to adequately provide for all species. For example, one reason the strategy provides a reasonable assurance of persistence, even for those species where pre-disturbance surveys are not practical, is the high likelihood that other elements of the Northwest Forest Plan are making significant contributions to their habitat needs.

202. Comment: The Draft SEIS should include a detailed comparison of species-by-species and landscape approaches to forest management.

Response: The Northwest Forest Plan was designed primarily around an ecosystem approach. Effects to species were examined during that process and a decision was made to add additional mitigation for certain species in the form of Survey and Manage (and other mitigation measures added at that time). This SEIS proposes to address difficulties the Agencies have had with implementing those mitigation measures. These difficulties include conflicting, unclear, and absence of direction. The alternatives in this SEIS do not propose to reconsider the entire application of Survey and Manage to the Northwest Forest Plan Final SEIS, nor to reconsider other alternatives considered but not selected in 1994. The suggested analysis is outside the scope of this SEIS.

203. Comment: The Agencies should clarify the analysis of the alternatives using adequate scientific support.

Response: The Agencies have relied on the most up-to-date scientific information as the basis for the analysis. Chapter 3&4 has been reorganized and rewritten to add clarity, consistency, and better display the basis for conclusions. However, many of the species on Survey and Manage are rare endemic species about which little is known.

204. Comment: The Agencies should expand on the concept of “ecological or species risk” in the Final SEIS.

Response: The action alternatives have been designed to consider various management strategies to meet persistence objectives for Survey and Manage species. While providing for alternate means of achieving the overall goal of reasonable assurance of species persistence, the action alternatives objectively address common criteria or factors that indicate whether there is a concern for persistence (see Concern for Persistence section in Chapter 2). Additional information on ecological or species risk can be found within the species effects sections in Chapter 3&4. The species effects sections in Chapter 3&4 have been rewritten to better describe the effect of each alternative in terms of stability, distribution, and level of uncertainty.

205. Comment: The Draft SEIS briefly identifies changes since the Northwest Forest Plan was approved, but none of the changes are considered significant. How can new information about Survey and Manage be significant, but the listing of over a dozen ESUs (Evolutionary Significant Units) of salmon not be significant?

Response: The changes, including listing of a number of species under the Endangered Species Act, are not considered significant in relation to the analysis of effects to these species because probable listings under the Endangered Species Act were anticipated in the Northwest Forest Plan Final SEIS. Further, the biological status of these species, as described in the listing decisions, were not significantly different from their condition as described in that Final SEIS. Tiering, as presented in 40 CFR 1502.20, is an appropriate action in this situation since the Proposed Action is a change only to the Survey and Manage and related mitigation measures of the Northwest Forest Plan. The potential effects of these listings under the Endangered Species Act are briefly addressed in the Cumulative Impacts section in Chapter 3&4 and in Appendix G. An SEIS is being prepared here, not because the Agencies consider these changes to be significant, but, in part, because the Agencies wanted to provide a more structured public comment period and there is a high level of interest and likely controversy.

206. Comment: The Agencies should identify and consider species that are not limited only to old growth.

Response: FEMAT and the Northwest Forest Plan identified the concern for old growth and old-growth forest associated species as a major issue for habitat in the Pacific Northwest because the amount of old growth was being systematically reduced at the time. Species associated with other habitats are provided for through other elements of land and resource management plans, including the Agencies' special status species programs.

207. Comment: The Agencies should add species to Survey and Manage with this SEIS.

Response: The action alternatives each contain provisions to add species in the future. Since the Northwest Forest Plan (No-Action Alternative) does not suggest adding species, no call for nominations or information about new species was initiated. Assuming one of the action alternatives is selected, the addition of species will be considered in future years.

208. Comment: The Agencies should account for the effect eastside Late-Successional Reserve management is having on meeting species persistence objectives.

Response: Assumptions about Late-Successional Reserve management on the east side of the Cascades are consistent with the management of such areas suggested in the Northwest Forest Plan Standards and Guidelines. In general, experts writing the species effects sections considered Survey and Manage species to be secure in reserves, not because every site was guaranteed protection, but because the objectives of Late-Successional Reserve management in general are consistent with meeting persistence objectives for late-successional forest associated species.

209. Comment: The Agencies should only offer protection to species entitled legal protection.

Response: Species included in the Survey and Manage Standards and Guidelines were identified in the Northwest Forest Plan because there was a concern for their persistence and they were thought to be closely associated with late-successional and old-growth forests. One of the goals of the Survey and Manage mitigation measure, as with the Agencies' special status species programs, is to prevent listing under the Endangered Species Act. Although some Survey and Manage species are considered to be uncommon, rather than rare, listing under the Endangered Species Act can be prompted by substantial threats to a species, not just immediate rarity. For those species for which reserves and other standards and guidelines do not appear to provide a reasonable assurance for persistence, the Agencies are adopting these mitigation measures to avoid creating threats to species persistence from Agency actions which could result in legal protection under the Endangered Species Act. Further, the National Forest Management Act requires that the Forest

Service manage habitat to provide for viable populations of all native vertebrates and desirable non-native vertebrates. The Agencies' special status species programs establish policy for the management of other species to the degree practicable.

210. Comment: The Draft SEIS violates NEPA by failing to fully and fairly discuss the significant impacts that could result from the changes proposed to extensive, regional, and pre-disturbance surveys.

Response: Extensive and general regional surveys required under the Northwest Forest Plan are replaced by "strategic surveys" as described in the Strategic Survey section in Chapter 2. The need for and purpose of pre-disturbance surveys is clarified in Chapter 2. The effects of these changes are appropriately described in Chapter 3&4. The discussions of these two key parts of the actions alternatives has been expanded and clarified in the Final SEIS.

211. Comment: The SEIS should provide an analysis of the environmental effects that result from extending implementation dates and postponing completion of strategic surveys.

Response: Categories 1B and 2B in Alternatives 1 and 2, respectively, contain the restriction of "...the Agencies will not sign NEPA decisions or decision documents for habitat-disturbing activities in old- growth forests (a sub-set of late-successional forests - see glossary) in fiscal year 2006 (fiscal year 2011 for fungi) and beyond, unless either: strategic surveys have been completed for the province that encompasses the project area; or, equivalent-effort surveys have been conducted in the old-growth habitat to be disturbed." The environmental consequences discussions in Chapter 3&4 disclose effects on species where appropriate.

212. Comment: Alternative 3 includes 250-meter buffers. The Draft SEIS fails to disclose how the smaller buffers under Alternative 1 will allow species to persist at the site given the edge-effects of timber harvest.

Response: Alternatives 1 and 2 provide for a buffer size delineated as necessary to provide for persistence of taxon at the managed known site. It is anticipated the size of these sites would vary depending upon the species' needs and geographic, geologic, and botanic differences. The purpose of the 250-meter, one-size-fits-all buffer in Alternative 3 is to provide for ease of implementation. The size was selected because there are some parallels to maintaining microclimate conditions adjacent to clear cuts. Generally, there were no major differences in meeting species persistence objectives by alternative based on these differing approaches.

213. Comment: The Draft SEIS fails to consider the cumulative effects of exceptions and other changes to the Survey and Manage Standards and Guidelines.

Response: The standards and guidelines specify that professional judgment, coupled with locally specific information and advice from taxa specialists about the species, may be used to identify occasional sites not needed for persistence. These exceptions will be reviewed by the REO. One of the purposes of including advice from taxa specialists and REO review is so the implications of the exceptions can be considered in context with other exceptions and other information. The request should include sufficient information for the REO to complete an informed review.

214. Comment: The Draft SEIS does not mention logging in reserves. This logging should be acknowledged and included in the PSQ for a better estimate of actual volume removed.

Response: Harvests in the reserves are guided only by the management objectives of the reserves and are not part of the regularly scheduled timber harvest. Thus, they are not part of the PSQ. Although such management is statistically predictable (as it was in the Northwest Forest Plan Final SEIS), this volume is not included in PSQ because selling the higher volume would then become an objective, even if the reserve objectives would not allow harvesting. Including such constrained areas in the harvestable land base tends to place greater pressure to over-harvest other areas with fewer constraints. Harvests in the reserves are not discussed in this SEIS because they

involve young stand thinnings, salvage, or hazard reduction that do not significantly affect the stands functionality for late-successional forest associated species.

215. Comment: Since costs seem to be going up while appropriations are declining, sources and priorities for funding should be described.

Response: A discussion entitled Effects Assumption Relating to the Potential for Reduced Funding has been added to the Background section of Chapter 3&4. This discussion explains why Survey and Manage budgets are expected to increase, why identification of priorities for reduced funding would be impossible, and how species persistence objectives would continue to be met with reduced funding.

216. Comment: The SEIS should discuss how the alternatives will affect timber, prescribed burning, treatment of insect infestations, and any other programs that may be affected by implementation of the Survey and Manage Standards and Guidelines.

Response: The timber harvest discussion has been updated to include one additional year of known site information and effects to harvest volumes are displayed in the most detail possible given the nature of the available information. A detailed prescribed fire discussion has also been added that includes acres expected to be available or unavailable for prescribed fire, by alternative. Effects to other potentially habitat-disturbing functional areas are expected to be similar to those described for timber harvest. The Socioeconomic section describes effects to mining and other resources. Management of insect infestations takes on added complexity because of the Survey and Manage Standards and Guidelines, but many of these effects are not new and do not vary between alternatives. Effects because of the overall Survey and Manage Standards and Guidelines are described as part of the 1994 Northwest Forest Plan Final SEIS and it is not necessary to repeat them in this SEIS. One standard and guideline was added to the Final SEIS that could affect management of outbreaks of exotic species or other fast-moving serious pests: "Pre-disturbance surveys are not required in the unusual circumstance such that a delay in implementation of the activity (to permit pre-disturbance surveys) would result in greatly increased and unacceptable environmental risk. Such circumstances are subject to review by the REO to ensure the urgency of the activity justifies the risk to species."

217. Comment: The Draft SEIS does not adequately describe the options available when Survey and Manage species are discovered where eradication of an exotic pest or pathogen is needed.

Response: An exception to the requirement for pre-disturbance surveys has been added to the Final SEIS for "...unusual circumstances such that a delay in implementation of the activity... would clearly result in greatly increased and unacceptable environmental risk. Such circumstances are subject to review by the Regional Ecosystem Office to ensure the urgency of the activity justifies the risk to species." Also, exceptions to the management of known sites may be proposed, subject to review by the REO.

218. Comment: The effects of specific elements of the alternatives should be displayed. For example, how much of the timber harvest effects of Alternative 3 are from the larger buffer sizes.

Response: In general, the alternatives are similar enough to preclude the need to display the effects of individual elements. However, Alternative 3 does differ from Alternative 1 in two substantial ways and it is desirable to display the effects of these differences. Alternative 3 includes larger buffers and equivalent-effort surveys which both increase the projected acreage of known sites. Figure 3&4-13 has been added to the timber harvest discussion to display additional information about the projected acreage of known sites, based on relative rarity and alternative. Providing further detail on this subject is complicated by the overlap between known sites projected from equivalent-effort surveys and sites resulting from larger buffers.

Aquatic Ecosystem

219. Comment: The Final SEIS should include a factual and detailed explanation of the protection provided to aquatic species by the different alternatives.

Response: There is no need to provide the suggested information in the Final SEIS. The alternatives in this SEIS do not change the basic approach to the Aquatic Conservation Strategy nor conclusions relating to aquatic species contained in the Northwest Forest Plan Final SEIS. “Riparian Reserves are designed to be large enough to protect the ecological values required by riparian-dependent plant and animal species” (USDA, USDI 1994a, p. F-167). The Aquatic Conservation Strategy is a landscape-level strategy and was not designed to address species-specific needs. It is designed to restore watershed and aquatic ecosystem functions and processes that support aquatic and riparian-dependent species throughout the range of the northern spotted owl. (See also comment/response 148.)

220. Comment: The Agencies should take into consideration studies demonstrating the superior water quality and wildlife habitat provided by streams untouched by human activity.

Response: The Aquatic Conservation Strategy, in particular the Riparian Reserve land allocation, maintains and restores the functions and processes needed to sustain the conditions to support riparian and aquatic-dependent species. The widths of the Riparian Reserves are based on information to maintain and restore water quality. “Full implementation of the selected alternative (Aquatic Conservation Strategy) is expected to maintain and improve water quality and be consistent with the enforceable policies of federally approved...pollution control programs” (USDA, USDI 1994a, p. F-177). Additional consideration of the Aquatic Conservation Strategy is outside the scope of this SEIS.

221. Comment: The Agencies should incorporate data on the relationship between natural disturbance regimes and terrestrial-riparian diversity into management plans for riparian buffers.

Response: Studies on the relationship between disturbance regimes and terrestrial-riparian diversity is beyond the scope of this SEIS. The alternatives display different ways of addressing the Survey and Manage Standards and Guidelines with some species-specific management guidance.

222. Comment: The Aquatic Ecosystem section of the Final SEIS should include a cumulative effects analysis.

Response: Cumulative effects are addressed in the Cumulative Impacts section in Chapter 3&4 of this SEIS which briefly discusses the effects of listing of various fish stocks. This analysis supplements the analysis provided in the Northwest Forest Plan Final SEIS. This SEIS concludes that none of the alternatives affect the 1994 Northwest Forest Plan conclusions for maintaining and restoring healthy watersheds in the planning area.

223. Comment: The Agencies should specify the nature of the “additional measures” described in the Aquatic Ecosystem section of the Draft SEIS (p. 141) that purport to reduce the risks to aquatic-dependent species.

Response: Species-specific mitigation measures are described in this SEIS. As stated in the Aquatic Ecosystem section, the Survey and Manage Standards and Guidelines provide management guidance for riparian and aquatic-dependent species in addition to the standards and guidelines established through the Aquatic Conservation Strategy of the Northwest Forest Plan. For Survey and Manage species associated with aquatic and riparian habitats, the Survey and Manage Standards and Guidelines provide for Management Recommendations that would guide management of known sites for these species, specific to their particular habitat needs.

224. Comment: The Agencies should protect riparian areas to reduce declining salmon populations.

Response: Over 40 percent of the lands in the Northwest Forest Plan area are managed according to the standards and guidelines for Riparian Reserves specified in the Northwest Forest Plan ROD. None of the alternatives would change that management direction.

Forest Ecosystem

225. Comment: The Agencies should maintain small, old-growth habitats that still exist within a matrix of younger stands. Future activities that might remove these remnant stands should be disclosed to the public.

Response: The Agencies do maintain small patches and individual old trees within younger stands. Retaining these characteristics during regeneration harvests helps provide for structural diversity in the new stand much sooner than would develop if the stand were even-aged. The Northwest Forest Plan already includes standards and guidelines requiring, on most National Forests, retention of 15 percent of each cutting unit in the largest and oldest trees available. Nearby riparian and other reserves do not count toward this 15 percent. BLM units have a similar standard. Individual Survey and Manage sites may correspond with these patches, or may be in addition to these patches and provide additional benefits to those intended by the 15 percent retention requirement. These standards and guidelines in the Northwest Forest Plan relative to old-growth fragments are not changed by this SEIS. The public, including tribal organizations, will also have a chance to comment on individual projects that affect these remnant stands. These individual projects, proposed at the local level, will be analyzed through the NEPA process and disclosed to the public.

226. Comment: The Agencies should recognize that about 50 percent of the reserves are plantations and young natural forests.

Response: The mix of forest stand age classes in reserves was considered in the Northwest Forest Plan SEIS and by the FEMAT panels. The expected increase of late-successional age classes in this mix over time due to ingrowth is described in the Northwest Forest Plan Final SEIS. Relevant points of that discussion have been carried into the Forest Ecosystem section in Chapter 3&4 of this SEIS. Impressions in the Draft SEIS that total late-successional and old-growth acreage was being reduced have been corrected.

227. Comment: The Agencies should consider the role of forests in the global carbon cycle when making management decisions.

Response: The role of forests in the global carbon cycle, or for that matter the portion of the federal forests to be managed for regularly scheduled timber harvest (PSQ), is outside the scope of this SEIS. The Northwest Forest Plan Final SEIS, which is being supplemented by this document, already discussed these issues, as appropriate.

228. Comment: The Agencies should substantiate their claim that late-successional and old-growth forest will be replaced at four times the rate it is lost.

Response: The discussion of late-successional forests in the Forest Ecosystem section of Chapter 3&4 has been rewritten to provide a better explanation of the rate of ingrowth.

229. Comment: The courts have held that short-term ecological degradation is not an acceptable trade-off for unsubstantiated long-term benefits Pacific Coast Federation of Fishermen's Associations v. National Marine Fisheries Service (No. C99-67R - W.D. Washington, Sept 30, 1999) (PCFFA v. NMFS) as stated on page 133 of the Draft SEIS. The Agencies seem to think it is acceptable to lose an unknown number of Survey and Manage species and associated late-

successional and old-growth habitat if the forest ecosystems within the range of Northwest Forest Plan are benefitted at some as yet undetermined point in the future.

Response: The court in the cited case did not find that trade-offs cannot be made. The court was dissatisfied with the supporting documentation for the biological opinion's conclusions that the short-term degradations would not jeopardize the species, even though there were long-term benefits to the species. Neither this court nor any other court has held that, as a matter of law, such trade-offs cannot be made. For example, the court recognized the fact "that a project [that] will result in some degradation does not, standing alone, constitute [Aquatic Conservation Strategy of the Northwest Forest Plan] noncompliance." See PCFFA v. NMFS, page 15. Furthermore, the same court upheld the programmatic biological opinion on the Northwest Forest Plan, even though it recognized and accepted that individual projects had the potential for minor, short-term adverse effects. See PCFFA v. NMFS, page 16; and PCFFA v. NMFS, Civ. No. C 97-775 R (W.D. Washington, April 28, 1998).

Where decisions involving short-term degradations have been subject to adverse court rulings, it is because of a finding of inadequate analysis or documentation to support those decisions under procedural statutes such as the National Environmental Policy Act or the Administrative Procedures Act. So long as the proper analysis is made and so long as no jeopardy would be caused to a species listed for protection under the Endangered Species Act, there is no law which would prohibit the decision-maker from choosing to accept short-term degradation to gain long-term benefits.

If such a ruling were made, it would prevent the Agencies from choosing trade-offs such as accepting a few days of turbidity in a stream in order to open up a blocked culvert that is preventing fish passage to spawning areas. The removal of any discretion by agency decision-makers to accept trade-offs between short-term degradation and long-term benefits would be far more detrimental to the long-term recovery of endangered fish species than any short-term impacts of restoration activities. Long-term benefits can be "substantiated" without having a centuries long test project. Sufficient information is known about the life history and habitat requirements of fish species to know that such things as passage to spawning beds is important to their recovery. Precise data to substantiate the exact degree to which a particular spawning bed would contribute to the long-term recovery of the species is not needed. Scientists know from countless observations that the presence of large down woody debris is important to many species. Numerous sites, which have been previously logged for high grade timber many decades ago, have given us unintended test plots for observing the likely long-term benefits of various standards and guidelines of the Northwest Forest Plan such as green tree retention and large down woody debris requirements.

The long-term benefits of the Northwest Forest Plan are not "unsubstantiated." The Northwest Forest Plan is intended to be adaptable to changing information. As knowledge is gained regarding the habitat requirements and management techniques which are beneficial to Survey and Manage species, the beneficial aspects of the Northwest Forest Plan will continue to improve as well. The greatest threats to the long-term management of these species are rigid principles such as "no short-term impact can be traded off for a long-term benefit" or "no human activity can be considered as beneficial to wildlife."

The adoption of any of the alternatives in this Final SEIS is not expected to lead to the loss of any of these species. Nowhere in the Northwest Forest Plan, or in this SEIS, has it been stated that the loss of any species was acceptable for any reason. This SEIS proposes to amend certain mitigation measures that were adopted in the 1994 Northwest Forest Plan ROD. These mitigation measures were designed to prevent the possible unintended loss of any species from the activities contemplated in the Northwest Forest Plan. What was determined acceptable in the Northwest Forest Plan in 1994, for instance, was the magnitude of the potential inadvertent loss of individual members of certain species during the time given for developing Survey and Manage protocols. The reason it was acceptable was because this potential inadvertent loss was not expected to significantly affect meeting persistence objectives for any of these species.

230. Comment: Forested ecosystems should be managed by registered foresters.

Response: Forest management to meet the full array of management objectives, is planned and designed by interdisciplinary teams of professionals using the best available science, for ultimate decisions by Agency line officers. These teams are comprised of professionals in a variety of disciplines including foresters, wildlife biologists, hydrologists, fish biologists, ecologists, and archeologists, etc. The resultant management activity is described in detail in a silvicultural prescription. The documentation and the results are not unlike what could be expected from a good prescription written by a registered professional forester with access to multiple biological specialists.

231. Comment: Environmental safeguards recommended in the Draft SEIS should be stronger than those called for in the original Northwest Forest Plan.

Response: The scope of this SEIS is limited to the needs identified in Chapter 1 regarding Survey and Manage and related mitigation measures. Consideration of the standards and guidelines or land allocations in other parts of the Northwest Forest Plan are outside the scope of this SEIS.

232. Comment: The Agencies should reconcile the different definitions of “old growth” found in FEMAT, the Northwest Forest Plan, and the Survey and Manage documents.

Response: Definitions of old growth vary with forest type. The FEMAT glossary definition that seems to apply to west-side Douglas-fir, and the FEMAT general definition of old growth have been included in the glossary, as well as a reference to the Forest Service’s 1993 Interim Old-Growth Definitions which contain specific parameters for various forest types including those on the east side of the Cascades.

233. Comment: Protection levels for species should be at an ecosystem level.

Response: The Northwest Forest Plan was designed to apply to the ecosystem level, to restore ecosystem processes that may have been lost due to previous activities or events. Some late-successional forest components (such as down logs or canopy cover) are specifically mentioned when addressing late-successional forest issues, such as the management of habitat components for individual species. However, the goal of the Northwest Forest Plan is to promote the maintenance and restoration of ecosystem function and structure for all late-successional forest associated species in the area of the Northwest Forest Plan. For many of these species, this provision is only a transitional protection measure until strategic surveys can determine that their needs will be met by the reserve system and other standards and guidelines. Some species have such local distribution and specific habitat requirements that site-specific management, including specific habitat components, may be needed to adequately provide for a reasonable assurance of persistence. This site-specific management for species that meet the criteria for inclusion in Survey and Manage does not preclude ecosystem management at the landscape level. Indeed, for species with extremely local distribution and unique habitat requirements, site management would equate to ecosystem management for that species.

234. Comment: The Agencies should protect the genetic diversity of the flora and fauna of the remaining Pacific Northwest old-growth forests.

Response: For the most part, the Northwest Forest Plan takes an ecosystem-based approach to protecting the genetic diversity of the flora and fauna of species closely associated with late-successional forests. The Late-Successional Reserves were developed to include the most “ecologically significant” old growth in a network large enough to withstand and benefit from disturbance processes and the diversity they create. The Northwest Forest Plan is a management strategy designed to provide for the diversity of old-growth forest associated species. The identified purpose and need of this SEIS deals with the efficiency and effectiveness of Survey and

Manage Standards and Guidelines, surveys, and management recommendations. Regardless of the alternative chosen, ecosystem effects are expected to continue to be within the range anticipated by the Northwest Forest Plan Final SEIS.

235. Comment: The Agencies should take into account the geographic and temporal cumulative effects of large-scale disturbances in reserves on population viability.

Response: The Northwest Forest Plan is a broad-based approach to sustaining ecosystem functions, processes, and long-term resilience. The network of Late-Successional Reserves and the standards and guidelines for the forest Matrix between reserves are designed to work together to provide for long-term recovery of individual reserves following large-scale disturbance processes such as fire and windstorms that might have adverse short-term impacts to late-successional forest associated species. The designers of this strategy built a restoration and maintenance strategy to apply to all lands administered by the Agencies in the Northwest Forest Plan area. Effects are predicted to be a positive influence on population viability. To the extent information is available, these cumulative effects are incorporated into species outcomes anticipated for each alternative.

236. Comment: The Final SEIS should include an analysis of impacts to forest ecosystems and a summary of the Northwest Forest Plan data to which the analysis is tiered.

Response: The analysis of impacts to forest ecosystems from the implementation of the combined standards and guidelines of the Northwest Forest Plan is an issue that has been addressed through the 1994 Northwest Forest Plan Final SEIS. The Survey and Manage SEIS does not substantively change the baseline for that analysis so additional analysis of this issue is not required. Data pertinent to effects on Survey and Manage species has been used in the Species Review Process to assign species to management categories and has been considered in the analysis of effects to those species and other resources, as presented in Chapter 3&4.

237. Comment: The Agencies should analyze the effectiveness of protected areas in maintaining biodiversity and ecosystem functions.

Response: The analysis of the effectiveness of reserves and other areas is an issue that has been addressed through the Northwest Forest Plan Final SEIS. Briefly, the Northwest Forest Plan has as its basis a system of reserves where species (even species that have large home ranges and are wide-ranging) can persist. The intervening Matrix is managed to provide an adequate level of connectivity among those large reserves, in part through management of Riparian Reserves. The Aquatic Conservation Strategy provides a high level of protection for the associated aquatic system. Other standards and guidelines provide for the retention of other forest legacy that promotes some retention and restoration of old forest conditions in the activity areas within each watershed. Finally, Survey and Manage measures were added as a mitigation to decrease the likelihood that some species would be inadvertently harmed by management activities. Collectively, these measures maintain biodiversity and ecosystem processes and functions. This Survey and Manage SEIS does not substantively change these principles or the baseline for that analysis and additional analysis of this issue is not required at this time.

238. Comment: The Agencies should protect the microclimate associated with old-growth forests.

Response: The effects of forest management on microclimate associated with old-growth forests is an issue that has been addressed through the Northwest Forest Plan Final SEIS. Microclimate effects were considered and are the basis for certain elements of the Northwest Forest Plan such as the size of the Late-Successional Reserves, Riparian Reserves, and buffers for individual species. The Survey and Manage SEIS does not substantively change the baseline for that analysis and additional analysis of this issue is not required at this time.

239. Comment: The Agencies should recommend Wilderness protection for mature and old-growth forests.

Response: Recommending lands for Wilderness is beyond the scope of this SEIS.

240. Comment: The Agencies should preserve biodiversity by protecting old-growth forests.

Response: The maintenance and protection of biodiversity is an issue that has been addressed through the Northwest Forest Plan Final SEIS. The role of Survey and Manage species in maintaining biodiversity of late-successional forests has not changed since that analysis and additional analysis of this issue is not required at this time.

241. Comment: The Agencies should take into consideration the superior ecological condition of old-growth forests.

Response: Ecological conditions provided by old-growth and late-successional forests is an issue that has been addressed through the Northwest Forest Plan Final SEIS. The Survey and Manage SEIS does not substantively change the baseline for that analysis and additional analysis of this issue is not required at this time.

242. Comment: The future of the forest and its irreplaceable resources should be protected against the gradual destruction of old growth.

Response: The resources associated with, and values of, old-growth forests are issues that have been addressed through the Northwest Forest Plan Final SEIS. The Survey and Manage SEIS does not substantively change the baseline for that analysis and additional analysis of this issue is not required at this time.

243. Comment: The Agencies should use natural disturbance processes as their primary late-successional and old-growth management tool.

Response: Natural disturbance processes in late-successional forests is an issue that has been addressed through the Northwest Forest Plan Final SEIS. The Survey and Manage SEIS does not substantively change the baseline for that analysis and additional analysis of this issue is not required at this time.

244. Comment: The Agencies should include a margin of safety in their protection measures for old-growth ecosystems.

Response: The management of late-successional and old-growth forests is an issue that has been addressed through the Northwest Forest Plan Final SEIS. First, the standards and guidelines call for management activities that will reduce the risk of large-scale disturbances. Second, reserves were identified in a system across the range of the northern spotted owl, in a somewhat redundant network. This network is designed to provide for recovery of ecosystem functions and processes following catastrophic natural disturbance. Loss of one or more reserves due to large disturbance events would be mitigated by the availability of other reserves in the network, thus, providing a margin of safety. The Survey and Manage SEIS does not alter this system of reserves. Additional analysis of this issue is not required at this time.

245. Comment: The Agencies should clarify the relationship between management for ecosystem health and protection of Survey and Manage species. Some management activities, particularly prescribed fire, are a necessary remedy for declining forest health on a landscape scale

Response: Ecosystem management concepts emphasize the importance of processes at the landscape scale over hundreds of years. Survey and Manage Standards and Guidelines emphasize individuals and populations at the site scale over several life cycles. There will continue to be conflicts between these approaches.

The Final SEIS states that ecosystem health is associated with disturbance processes. Fire is an example. This is particularly true in the ecosystems of southern Oregon and northern California, and the dry “east” side Cascade types, where historic intervals between fire events were often less than 10 years. Species in these environments have evolved with fire, and in many cases, viability is linked with fire. Disturbance, in this case fire, provides selective stress that helps drive selection, adaptation, and evolution. It is likely, the Survey and Manage species in these systems have also adapted to and evolved with fire. However, both fire exclusion and prescribed burning are potentially detrimental to individuals or populations in the short term. The SEIS also discloses that with any disturbance event, there will be “winners” (individuals within a species that are enhanced by disturbance) and “losers” (individuals within a species that are killed or left at a competitive disadvantage). Moreover, given the random affects of fire, even individuals with well-developed avoidance and resistance strategies may be killed.

Decisions on whether to extinguish (i.e. exclude) or prescribe fire cannot be answered in a general context. Specific local variables should be considered and there will always be some degree of uncertainty. Risk management will be a critical element of decision making.

Allowing fire to play its natural role, particularly in areas where management is basically passive (i.e. wilderness and research natural areas) has been gaining support and is likely to benefit Survey and Manage species in the long run, particularly in fire-adapted ecosystems. This SEIS acknowledges the fact that fire can potentially have short-term detrimental impacts to individual members of some Survey and Manage species and those concerns will be addressed through Management Recommendations.

246. Comment: The Agencies should validate their assumptions regarding the role and management of old-growth fragments.

Response: The Northwest Forest Plan ROD (p. C-44) requires retention of old-growth fragments in watersheds where little remains. The Survey and Manage SEIS does not change the existing standards and guidelines for retention of old-growth fragments; additional analysis of this issue is not required at this time.

247. Comment: Survey and Manage Standards and Guidelines should be applied to all forest lands vulnerable to timber harvest activities.

Response: Generally, the Survey and Manage Standards and Guidelines apply to all habitat-disturbing activities, not just timber harvest activities, in all land allocations. However, the standards and guidelines do contain a few specific exemptions.

248. Comment: Our relative ignorance of ecological and species interdependence carries its own risk of species extinction; therefore, the Agencies should implement Survey and Manage Standards and Guidelines to achieve 100 percent assurance of species persistence, instead of assuming that loss of species under a “reasonable assurance of persistence” would not affect ecosystems.

Response: The SEIS does not conclude that species extinction does not affect ecosystems. The Survey and Manage mitigation measure is designed to add confidence that the Northwest Forest Plan meets persistence objectives (which would prevent extinction). However, regardless of the alternative, or mix of alternatives chosen, absolute certainty or 100 percent assurance of persistence of all species is not possible because there are risks in all endeavors. The best that the Agencies can do is apply the best science and make a responsible investment of public resources.

249. Comment: The Agencies should ensure protection for old-growth associated species.

Response: The management of old-growth forest and associated species has been addressed through the Northwest Forest Plan Final SEIS. The Survey and Manage mitigation measure provides additional management for species for which other elements of the Northwest Forest Plan

may not provide a reasonable assurance of persistence. All of the action alternatives are designed to continue meeting this objective.

250. Comment: The Agencies should protect old-growth stands as ecological anchors counteracting the effects of private industrial forestry.

Response: The cumulative effects of timber harvest on nonfederal lands is an issue that has been addressed through the Northwest Forest Plan Final SEIS. The Survey and Manage SEIS does not substantively change the baseline for that analysis and additional analysis of this issue is not required at this time.

251. Comment: The Agencies should take into consideration the long-term effects of logging on the environment.

Response: The long-term effects of logging on the environment is an issue that has been addressed through the Northwest Forest Plan Final SEIS and in individual land and resource management plans. The Northwest Forest Plan was the reconciliation of these perceived conflicting needs. The Survey and Manage SEIS does not substantively change the baseline for that analysis and additional analysis of this issue is not required at this time.

252. Comment: The Agencies should conclusively demonstrate that the Survey and Manage mitigation measures will have a “relatively minor effect” on and “no significant cumulative change” to forest ecosystems.

Response: The Northwest Forest Plan designated approximately 81 percent of the planning area as reserves. The Northwest Forest Plan Final SEIS estimated that a comparatively small number of additional acres would be designated for the management of occupied sites for Survey and Manage species. Since Survey and Manage species were believed to be rare and the known site management requirements were at the site scale, the acreage was expected to be small. In cases where a relatively large number of sites were discovered, it was expected that the species would be removed from Survey and Manage, management of known sites would not be necessary, or that the species would be found to be relatively more common than expected and management of high-priority sites would meet persistence objectives. Acres to be managed as known sites for Survey and Manage species is now projected to be higher than projected in the 1994 Northwest Forest Plan Final SEIS, but at the ecosystem function scale the acreage is still expected to be relatively small. Further, standards and guidelines have been changed to better facilitate the use of prescribed fire in high fire frequency areas. For these reasons, the Northwest Forest Plan Final SEIS conclusions regarding ecosystem effects remain as expected.

253. Comment: The Agencies should reconcile the conflicting Northwest Forest Plan statements proposing late-successional and old-growth harvest and the need for late-successional and old-growth reserves.

Response: The Northwest Forest Plan was based on dual needs, the need for forest habitat and the need for forest products. The Survey and Manage SEIS does not alter those needs and additional analysis of this issue is not required at this time.

254. Comment: The Agencies should analyze the effects of soil biodiversity on the cycling of limited nutrients in the Klamath/Siskiyou region.

Response: This purpose of this SEIS is limited to analyzing the effects of modifying the Survey and Manage and related mitigation measures. The suggested analysis is outside the scope of this SEIS.

Wildland and Prescribed Fire

255. Comment: The Northwest Forest Plan failed to include an estimate of acreage potentially affected by natural fire occurrences.

Response: The Wildland and Prescribed Fire section in Chapter 3&4 (added to this Final SEIS as a result of public comment) includes an estimate of the annual acreage burned under historic natural fire regimes.

256. Comment: The Agencies should examine potential conflicts between the stated goals of the reintroduction of prescribed fire and meeting species persistence objectives.

Response: The Wildland and Prescribed Fire section in Chapter 3&4 has been expanded to address the implications of this conflict to forest ecosystems. Additionally, language was added in Chapter 2 suggesting that Management Recommendations address whether the use of low-intensity prescribed fire within known sites is acceptable. Such fires may be appropriate in order to reduce an unacceptably high risk of future large-scale disturbance, even if it entails some risk to individual site occupancy. This approach is expected to at least partially reduce this conflict, provide better overall ecosystem protection from large-scale disturbance, and permit continued restoration of south and eastside fire-dependent plant communities.

257. Comment: The Final SEIS should include new information on fire events occurring after the completion of the Northwest Forest Plan.

Response: Information relating to wildfire occurrence, fire regime, and condition class information has been updated to reflect recent wildfire history and fire risk. Wildland and Prescribed Fire is now a separate section in Chapter 3&4.

258. Comment: Underburns, fire break systems, thinning of young stands, logging, and other treatments should be used to reduce the risk of catastrophic fires. These activities pose a low risk for most species.

Response: The activities listed are ways to reduce the risk of large-scale, high-intensity wildfire. Provisions to utilize these activities to reduce fire risk are built into some of the Northwest Forest Plan Standards and Guidelines, notably in the Guidelines to Reduce Risk of Large-Scale Disturbance section in the Late-Successional Reserves Standards and Guidelines. Management of known sites for Survey and Manage species can potentially limit these activities and, in some cases, put the species at more risk than the activity would because of the risk of intense wildfire. For this reason, several changes to the standards and guidelines were made in this Final SEIS. The direction for writing Management Recommendations (which are the instructions for managing known sites) now includes: “In high fire frequency areas such as east of the Cascades or in the Klamath Provinces, specific consideration should be given to the acceptability of the use of prescribed fire in known sites to reduce the risk of future large-scale or high intensity fire, even if it entails some risk to individual site occupancy.”

Text has also been added to the instructions for Survey Protocols authorizing protocols to “... identify habitat conditions or locations, or criteria for identifying such conditions locally, where surveys are not needed for a reasonable assurance of persistence. Such habitat may include, but not be limited to, seral stages, stand age, stand complexity, or stand origin, where occupied sites, if present, are likely incidental, non-viable, or otherwise not important for overall species persistence.” This language will preclude surveys in younger stands for many species and will allow thinning activities to be completed where appropriate.

Wording has also been added to exclude certain prescribed fires (wildland fire for resource benefits) from the pre-disturbance surveys requirement because the nature of the fire and the habitat make unacceptable effects unlikely. This wording is included in the definition of habitat-

disturbing activities, and applies to designated Wilderness, certain backcountry areas, and Late-Successional Reserves where the burn is discussed in the Late-Successional Reserve Assessment and reviewed by the REO.

The requirement to retain all snags over 20 inches has been changed and now identifies that “snags over 20 inches dbh may be marked for cutting only after retaining the best available snags (considering size, longevity, etc.) in sufficient numbers to meet 100 percent of potential populations levels of these four species.” This, and existing authority to make necessarily balanced resource decisions at the project level, help provide needed flexibility to keep fuel breaks effective and safe.

Finally, the Wildland and Prescribed Fire section in Chapter 3&4 has been expanded to better show the effects of the various alternatives on the prescribed fire program.

259. Comment: Fuel reduction activities should occur in a timely manner to reduce the risk of catastrophic fire.

Response: Several changes to the standards and guidelines regarding prescribed fire have been made in the Final SEIS. The instructions for Management Recommendations now include a requirement to specifically consider the use of prescribed fire in known sites in high fire frequency areas. The improved emphasis and clear direction for strategic surveys should result in more information about species habitat needs, which will be reflected in the Management Recommendations and ultimately result in more appropriate and timely application of fuel management, including prescribed fire. The sooner species information becomes available, the sooner fire management plans can be completed and fuel reduction activities can be conducted. In drier ecosystems where fire was frequent and the proportion of stand replacement fire was low, the risk of high severity fire should gradually decrease. The likelihood of meeting persistence objectives for species that evolved in these fire-dependent systems will likely be enhanced. Standards and guidelines for pre-disturbance surveys in Wilderness and other similar areas have been changed to exempt most such areas from pre-disturbance surveys. This will help achieve both hazard reduction objectives and species management objectives in a cost-efficient manner. In other areas, prescribed fire is a planned event, allowing pre-disturbance surveys to be completed as required.

260. Comment: The Agencies should address the relationships between Survey and Manage and fire suppression/forest protection in the Final SEIS.

Response: The Final SEIS has an expanded section on the effects of Wildland and Prescribed Fire activities. In Chapter 2, Survey and Manage requirements are addressed as they relate to Wilderness, wildland fire use, and emergency fire suppression activities, as well as prescribed fire.

261. Comment: Prescribed burning and commercial logging activity should be addressed separately in the Final SEIS.

Response: There is some confusion in the difference between fuels treated as part of timber sales and the use of prescribed fire for hazard reduction and ecosystem restoration purposes. The Wildland and Prescribed Fire section in Chapter 3&4 has been rewritten to assist in differentiating between the two. Generally, the use of the term “prescribed fire” in this document relates to hazard reduction and ecosystem restoration.

262. Comment: The Agencies should consider that they are mandated by both the Northwest Forest Plan and the Federal Wildland Fire Management Policy to conduct intensive surveys of species potentially affected by fire management actions.

Response: The Federal Wildland Fire Management Policy does not specifically mandate that intensive surveys be done. What the Federal Wildland Fire Management Policy does do is direct wildland fire agencies to develop fire management plans. Fire management plans are

implementation documents and tier to land and resource management plans with management direction coming from these plans as well as from the Northwest Forest Plan.

263. Comment: The Agencies should allow exceptions for fuel breaks in the standards and guidelines for snag retention.

Response: Standards and guidelines for Late-Successional Reserves (USDA, USDI 1994b, pp. C-12 and C-13) provide guidelines for reducing risk of large-scale disturbance. They address the need for “providing effective fuel breaks wherever possible.” Normally, the objective of providing effective fuel breaks and meeting standards and guidelines for snags can be accomplished at the same time.

264. Comment: The Agencies should address the effects of fire on habitat and meeting long-term species persistence objectives.

Response: For Survey and Manage species, the effects of fire on habitat for long-term species persistence objectives is addressed in Chapter 3&4 of this Final SEIS. This SEIS is tiered to the 1994 Northwest Forest Plan Final SEIS which includes additional analysis related to the effects of fire on meeting species objectives.

265. Comment: Species surveys for Canada lynx should be a required element of all site-specific fire management plans.

Response: Canada lynx is now listed under the Endangered Species Act as a threatened species. Site-specific fire management plans will consider the effects of fire on suitable habitat and known sites for Canada lynx and be reviewed for compliance with the Endangered Species Act. A nationwide conservation agreement has been developed and signed by the Forest Service and the U.S. Fish and Wildlife Service. In this agreement, the Forest Service has agreed to use the Lynx Conservation Assessment and Strategy, an interagency strategy developed by biologists and managers with expertise on the species from several federal and state agencies, in making determinations of effects for actions potentially affecting Canada lynx or its habitat in the planning area. Although a similar conservation agreement has been developed between the BLM and the U.S. Fish and Wildlife Service, the BLM has concluded that no suitable Canada lynx habitat occurs on BLM administered lands within the Northwest Forest Plan area, based on habitat identification and mapping criteria recently recommended by the Lynx Science Team. In addition, the Agencies will continue to conduct extensive surveys to further clarify the description and location of Canada lynx and their suitable habitat within the Northwest Forest Plan area.

Water Quality

266. Comment: The Agencies should consider the cumulative effects of past, present, and future activities on watersheds.

Response: The Aquatic Ecosystem section in Chapter 3&4 discloses impacts to watersheds. As noted there, none of the alternatives affect the analysis or outcomes included in the Northwest Forest Plan Final SEIS. The cumulative effects of past logging and other management activities were analyzed in the Northwest Forest Plan Final SEIS and in the Agencies’ land and resource management plans. The Survey and Manage SEIS does not alter that analysis and additional analysis is not needed at this time.

267. Comment: The Agencies should address the effects of logging on water quality.

Response: The potential effects of logging on water quality was addressed in the Northwest Forest Plan Final SEIS and is outside the scope of this SEIS.

268. Comment: The Agencies should prioritize watershed restoration.

Response: Prioritization of watershed restoration efforts and rural stabilization is outside the scope of this SEIS.

269. Comment: Federal Energy Regulatory Commission (FERC) licensing should not be held up because of Survey and Manage requirements.

Response: FERC licensing or re-licensing may be considered a potential habitat-disturbing activity. The Forest Service and BLM, under the Federal Power Act, may require compliance with the Survey and Manage mitigation measure. The action alternatives clarify the Survey and Manage mitigation measures and should reduce survey costs and reduce processing time for FERC licensing applications.

Amphibians

270. Comment: Alternative 3 provides the best assurance of meeting species persistence objectives for amphibians because it retains pre-disturbance surveys for all five species.

Response: Alternative 3 does provide a higher level of assurance of meeting species persistence objectives for amphibians than the other action alternatives as discussed in Chapter 3&4. However, pre-disturbance surveys are not necessary for all amphibians in order to meet species persistence objectives.

271. Comment: The No-Action Alternative is the best alternative to ensure the continuation of amphibian species because it maintains the Protection Buffer management direction. The loss of the Protection Buffer Standards and Guidelines for amphibians under the No-Action Alternative is a serious loss of mandatory species protection. Guidance under the action alternatives' Management Recommendations is undefined, potentially unbinding, and results in lesser species protection.

Response: The effects analyses identify several problems with the Protection Buffer Standards and Guidelines (e.g., Shasta salamander Protection Buffer Standard and Guideline does not recognize all occupied habitat areas for management and does not manage areas adjacent to occupied habitats as is implied in the standard's title by the use of the word buffer). With these issues being identified in the SEIS, the Management Recommendations under the preferred alternative would resolve these various conflicts. Thus, the replacement of Protection Buffer Standards and Guidelines with Management Recommendations would not result in less protection, but would improve known site management.

Once the draft Management Recommendations are approved and released, individual administrative units will comply with the Management Recommendations. Discretionary elements of Management Recommendations and Survey Protocols for salamanders are explicitly stated to clarify areas where field unit flexibility is expected. Case-by-case issues are expected to arise, requiring species-expert guidance or regional office decisions. Management Recommendations and Survey Protocols will be revised as new information or experience indicates a need.

Finally, the action alternatives do provide less management for two species, Siskiyou Mountains salamander and Del Norte salamander, when compared to the No-Action Alternative which requires management of all known sites. These two species have been assigned to less conservative categories, C and D, such that more risk to some individual sites is possible. The numbers of known sites and their distributions within their ranges were key criteria for this change in categories. These species are not as rare as those included in Category A; management of all known sites is not necessary for a reasonable assurance of species persistence. Although the No-Action Alternative provides more protection per site for these two species, it does not provide a mechanism for connectivity maintenance. The action alternatives of this SEIS provide greater protection for the important element of connectivity for these species than does the No-Action Alternative.

272. Comment: Definition and wording with regards to amphibians should be changed.

Response: The amphibian definition and related wording has been revised in the Final SEIS. The change to the definition suggested by this commenter was adopted (see Glossary).

273. Comment: Del Norte salamander should be assigned to Category 1C because there is a lack of justification to discontinue pre-disturbance surveys, it is unclear why it is “not practical” to survey for this species, and it is unclear why individuals are at risk under Alternative 3 when there are pre-disturbance surveys in effect.

Response: This species was assigned to Category 1D by the species review panel (see Appendix F). In particular, the total number of known sites, the large number of new sites detected during pre-disturbance surveys since adoption of the Northwest Forest Plan, and their distribution across the species’ range led to a determination that this species was uncommon (as opposed to rare), and that not all known sites throughout the species’ range were necessary to provide for a reasonable assurance of persistence. Category 1D includes species for which pre-disturbance surveys are not practical or not necessary. For Del Norte salamanders, such surveys are practical, but were determined not to be necessary by the Species Review Process to meet persistence objectives. These effects are discussed in Chapter 3&4.

The statement from the Draft SEIS “the risk of extirpation of individuals at local sites due to direct adverse effects of land management...” stems from site prioritization for management in Alternative 1, not from lack of pre-disturbance surveys. Under Alternatives 1 and 3, high-priority sites are to be identified and managed. Those sites determined not to be “high priority” may have management activities that pose risks to these salamanders at the site level.

274. Comment: The Agencies have failed to conduct Del Norte salamander surveys as required. Instead of surveying all likely-occupied talus habitat, the Agencies have sometimes chosen to label such habitat as presumed occupied and manage them accordingly.

Response: In some situations, the Agencies have chosen to identify some habitat as “presumed occupied” in order to reduce pre-disturbance survey cost while still providing for species protection. These sites are recorded in activity planning records and are, in fact, referred to in Alternative 2 as known sites that must be managed for 5 years until strategic surveys determine ultimate assignment of uncommon species. As discussed in Chapter 3&4, avoiding pre-disturbance surveys in this way is an acceptable practice and does not cause any adverse effect on the species.

275. Comment: Surveys should continue for salamanders because Riparian Reserves do not provide sufficient habitat protection.

Response: Riparian Reserve allocations, and the distribution of salamanders and/or their habitats within them, have not been used as a criterion to categorize salamanders according to whether or not pre-disturbance surveys are appropriate. Pre-disturbance surveys would be required according to the category to which they are assigned.

276. Comment: Based on the descriptions of the Siskiyou Mountains salamander and the Larch Mountain salamander, they should at present be categorized as “rare” rather than uncommon (i.e., they should be Category A).

Response: As stated in the Draft SEIS, the Species Review Process was rerun between the Draft SEIS and the Final SEIS. The Larch Mountain salamander was determined to fit the criteria for Category 1A. For the Larch Mountain salamander, recent surveys figured prominently into this category assignment: few new known sites have been found for this species in Washington despite a large survey effort in the last 2 years and few surveys have been initiated for this species in Oregon, where there remains uncertainty with regard to its distribution and status. These survey results supported a finding that this species is “rare.” The Siskiyou Mountains salamander was

found to meet the criteria for Category 1C. For the Siskiyou Mountains salamander, over 100 new known sites have been detected since the adoption of the Northwest Forest Plan. These new sites have extended its range boundary to the north, have been distributed across its range, and have extended the knowledge of its distribution to the south. These survey results supported a finding that this species was uncommon, as opposed to rare, and met the criteria for Category 1C (see Appendix F).

Arthropods

277. Comment: The Final SEIS should include more detailed discussion regarding the habitat relationships of invertebrates, particularly arthropods. Arthropods should be given more attention in the Final SEIS given their numbers and ecological importance.

Response: In FEMAT and in the Northwest Forest Plan Final SEIS, arthropods were addressed in 11 functional groups based on perceived ecological roles. Four groups were rated twice (duplicated in the “south range”) where there was a higher concern for persistence. This SEIS is tiered to the Northwest Forest Plan Final SEIS consistent with direction from 40 CFR 1502.20. Assignment of these four arthropods guilds in Category 1F, 2D, and 3C in the action alternatives, respectively, is consistent with the emphasis recommended in the Northwest Forest Plan Final SEIS which stated “For all functional groups subject to additional analysis, the standard and guideline for survey and management is not intended to be site specific” (USDA, USDI 1994a, p. 3&4-162). Studies are now underway to examine these relationships and effects to management practices. The definition of the “south range” has been added to Chapter 3&4 and the glossary to clarify where there is a higher level of concern for these functional groups.

278. Comment: The Agencies should use arthropods to supplement arguments for identifying lands not available for management.

Response: The rationale for species categorizations is presented by alternative in Chapter 2. The Agencies are not seeking reasons for identifying lands not available for management. A reasonable balance of reserves is already in place to provide an ecosystem approach adequate for most species. The purpose of the Survey and Manage mitigation measure is to provide additional management for certain species.

279. Comment: The Agencies should acknowledge survey efforts related to arthropods that have recently been completed or are presently ongoing.

Response: In response to concerns discussed in the Northwest Forest Plan Final SEIS regarding the ecological function of arthropods, various studies and surveys have been initiated by the Agencies. A general literature survey was initiated regarding the four arthropod guilds in the “south range.” A contract has recently been issued to inventory the literature of soil and litter and coarse woody chewer arthropods where little information exists. A retrospective study of previous forest management activity is currently underway in the northern California and southern Oregon true fir series. In addition, a study of the effects of thinning and prescribed or wildfire on soil and litter and coarse woody debris chewer arthropods is currently underway in northern California.

280. Comment: The SEIS should include information from known arthropod/pesticide experts.

Response: The narrow scope of the SEIS and the continued management of arthropods as described in the Northwest Forest Plan precluded the need to delve deeply into all aspects of arthropod management. Arthropod specialists will be involved during strategic surveys for these guilds.

281. Comment: The Agencies should acknowledge the Survey and Manage accomplishments for arthropods.

Response: The Background and Affected Environment section in Chapter 3&4 for Arthropods has been updated to reflect ongoing studies.

Bryophytes

282. Comment: *Tritomaria* species occupy a very distinct habitat type and typically grow in well formed mats. These species are identifiable and are not likely to be either overlooked or mistaken for any other organism by a trained surveyor.

Response: The Species Review Process evaluated current information regarding survey issues for all Survey and Manage species and this information is included in the administrative record. The Step 1 and 2 panels responded to various questions regarding the practicality of surveys for bryophyte species. This information was used to determine if surveys prior to habitat-disturbing activities were practical. The factors considered in evaluating the practicality of surveys prior to habitat-disturbing activities are stated in Chapter 2. It was determined that surveys prior to habitat-disturbing activities were not practical for *Tritomaria exsectiformis* and *T. quinquedentata* because of the difficulty detecting the species at a site given their small size, the small size of individual colonies and local populations, and because the species often grow intermixed with other bryophytes which makes detection difficult. Strategic surveys will be completed for both species of *Tritomaria*.

Fungi

283. Comment: The SEIS fails to disclose the species-specific consequences of the proposed action on fungi.

Response: The fungi effects analysis has been expanded. However, as noted in this effects analysis, there is little known regarding many of these species and to conduct a species-by-species analysis is not possible at this time. This lack of information is one of the reasons many fungi species were included under the Survey and Manage mitigation measure.

284. Comment: The conclusion that there is no significant difference in cumulative effects of the alternatives on fungi is not justifiable.

Response: The fungi section in Chapter 3&4 has been clarified to better describe the effects of all alternatives on fungi, and to clarify when knowledge gaps based on species rarity adds uncertainty to describing effects and contrasting alternatives. However, many species of fungi are so rare that no outcome can be stated with certainty that it would provide stability for these species, regardless of which alternative is selected. This is not a function of the alternatives, but rather the lack of stability associated with rare species. Additionally, the referenced statement was erroneously contained in the “Summary of Effects” section in Chapter 2, but not in the Environmental Consequences section for Fungi in Chapter 3&4. That statement has been omitted from this Final SEIS.

285. Comment: The Draft SEIS indicates that surveys for fungi will not be adequate unless a given site is surveyed for 5 years. This will not always be true and the plan should allow flexibility to adjust survey schedules.

Response: As discussed in Chapter 3&4, for fungi with sporocarps that are short lived and annually variable, the goal of “high probability of detecting occupied sites” requires 5 or more years of repeated surveying and is impractical to attain. Many of these species have been assigned to Category 1B or Category 1D. Under Alternatives 1 and 2, pre-disturbance surveys are not required. Under Alternative 3, equivalent-effort surveys would be completed during a reasonable time period (no more than two field seasons) (see Surveys Prior to Habitat-Disturbing Activities section in Chapter 2). The standards and guidelines in the action alternatives do allow flexibility.

286. Comment: Fungi species data should be revised to include a specimen of *Cortinarius magnivelatus*.

Response: The information related to the specimen was used. It was included in the information used to rerun the Species Review Process between the Draft SEIS and the Final SEIS.

287. Comment: The protection level for the fungus *Gomphus floccosus*, which is common, should be changed from Category 1D to Category 1F.

Response: As stated in the Draft SEIS, the Species Review Process was rerun between the Draft SEIS and the Final SEIS. A summary of changes by species is shown in Table 2-11. Based on the most current data available, *Gomphus floccosus* has been removed from the Survey and Manage mitigation measure in all of Oregon and Washington. In California, this species was assigned to Category 1F, 2D, and 3C in the action alternatives, respectively. Table F-1 summarizes the primary reasons for category assignments.

288. Comment: How many fungi species are included in the No-Action Alternative Category 2 and in Protection Buffers? Is it practical to survey for these species? It seems unwise to only conduct surveys for a short time.

Response: The No-Action Alternative Category 2 and Protection Buffers species are: *Bondarzewia mesenterica*, *Otidea leporina*, *O. onotica*, *O. smithii*, *Polyozellus multiplex*, *Sowerbyella rhenana*, and *Sarcosoma mexicanum*. They all have ephemeral, seasonally produced, and annually variable sporocarps that cannot be surveyed for reliably in one or two seasons. Equivalent-effort surveys identified under Alternative 3 are intended to find sites of the species, but with lower confidence than the original Northwest Forest Plan ROD which specified “a high probability of detecting occupied sites.” Five or more years of surveying any site might be required to meet that level of confidence.

289. Comment: *Sarcosoma mexicanum* should be protected in its entire range.

Response: As stated in the Draft SEIS, the Species Review Process was rerun between the Draft SEIS and the Final SEIS. A summary of changes by species is shown in Table 2-11. Based on the most current data available, *Sarcosoma mexicanum* has been removed from the Survey and Manage mitigation measure in all of Oregon except Curry and Josephine Counties and has been assigned to Category 1F, 2D, and 3C in the action alternatives, respectively, in Washington, California, and Curry and Josephine Counties, Oregon. The primary reasons for this change are summarized in Table 2-11 and Appendix F.

290. Comment: Habitat protection for *Bridgeoporus nobilissimus* should remain constant:

Response: Habitat protection for *Bridgeoporus nobilissimus* does remain constant. Under all alternatives, including the No-Action Alternative, *Bridgeoporus nobilissimus* is allocated “management areas of all useable habitat up to 600 acres.”

Lichens

291. Comment: The Agencies should evaluate habitat association for pin lichens before any of these species are removed from Survey and Manage.

Response: The Species Review Process evaluated current information regarding the habitat associations of all of the Survey and Manage pin lichens. Based on this review, the following pin lichens were removed from Survey and Manage because they did not meet the criterion of close association with late-successional and old-growth forests: *Calicium adaequatum*, *Chaenotheca brunneola*, *Cyphelium inquinans*, *Mycocalicium subtile*, and *Stenocybe major* (see Chapter 3&4 and Appendix F).

Evaluation of current habitat information for *Usnea longissima* throughout its range in the Northwest Forest Plan area concluded that it may be closely associated with late-successional or old-growth forest in parts of its range and it also occurs in riparian habitats that are not late-successional or old-growth forests. The Species Review Process also evaluated the distribution of known sites on federally managed land within the Northwest Forest Plan area, and the distribution of these sites relative to land allocations. Following this evaluation, *Usnea longissima* was assigned to Category 1A in California and in Curry, Josephine, and Jackson Counties in Oregon, because of the low number of recent sites on federally managed lands. In Washington, and in Oregon outside of Curry, Josephine, and Jackson Counties, *Usnea longissima* was assigned to Category 1F while strategic surveys help determine if the reserve land allocations provide a reasonable assurance of species persistence, which is one of the basic criteria for a species to be included in the Survey and Manage Standards and Guidelines. The factors that support the assignment of *Usnea longissima* to Category 1F are its widespread distribution, a moderately high number of recent sites documented in the Northwest Forest Plan area, a high number of federal known sites that occur within reserve land allocations, and a moderate likelihood of habitat occurring in the reserve land allocations.

292. Comment: The Agencies should reconsider removing those species of lichens that can be used as indicators to track the impact of air quality degradation.

Response: The referenced species do not meet one or more of the three basic criteria for inclusion under the Survey and Manage Standards and Guidelines. The Species Review Process evaluated current information on the species' range, distribution, number of known sites, and habitat associations. Several lichen species (*Lobaria oregana*, *Nephroma helveticum*, *N. laevigatum*, *N. resupinatum*, *Pseudocyphellaria anomala*, *P. anthraspis*, *P. crocata*, *Sticta fuliginosa* and *S. limbata*) were removed from Survey and Manage because it was determined that the reserve land allocations and provisions of the Northwest Forest Plan provide a reasonable assurance of species persistence. The factors that support this conclusion are widespread distributions, a moderate to high number of recent sites documented in the Northwest Forest Plan area, a high number of known sites occur within reserve land allocations, and a moderate to high likelihood of habitat occurring in the reserve land allocations. *Nephroma parile* was removed from Survey and Manage because it did not meet the criteria of close association with late-successional and old-growth forests. *Usnea longissima* remains on Survey and Manage for reasons other than those related to air quality (see Table F-2). Air pollution concerns are beyond the purview of the Northwest Forest Plan and air quality is managed under other laws. Even though most of these species have been removed from the Survey and Manage Standards and Guidelines, these species are still included in various monitoring activities in the Northwest Forest Plan area.

293. Comment: *Nephroma occultum* should be re-assigned to Category 1A.

Response: The Species Review Process evaluated the practicality of surveys prior to habitat-disturbing activities for *Nephroma occultum*. *Nephroma occultum* is assigned to Category 1B in this Final SEIS. *Nephroma occultum* is a canopy lichen and its occurrence in litterfall on the forest floor is unpredictable. The recent study by Rosso et al. (2000) recommends tree climbing in combination with litterfall surveys for confident determination of the presence of *Nephroma occultum* in a stand. Routine climbing of old trees represents a substantial safety risk. Because of the unpredictable nature of observing this species in litterfall on the forest floor, coupled with the safety risks of climbing old trees to verify its occurrence, it was determined that *Nephroma occultum* did not meet the criteria for practicality of surveys prior to habitat-disturbing activities. *Nephroma occultum* will be included in strategic surveys. Additional sites may be discovered incidentally during litterfall surveys for other species and known sites would be managed.

294. Comment: *Nephroma occultum* must be managed at the stand level, not the site level. Because *N. occultum* virtually only grows in very old trees (more than 400 years), simply leaving a one site tree buffer will cause the species to die out at the local level. It cannot persist with this buffer because the surrounding trees will be logged every 80 years and the one tree left in the middle of a small buffer will eventually die without the opportunity to re-colonize the lichen.

Response: The Survey and Manage Standards and Guidelines require that Management Recommendations be developed and written for each species. The Management Recommendation is species-specific and is the document that directs management of known sites. The objective for managing sites is to maintain the persistence of the species at the site, where appropriate. Consistent with this SEIS (except for Alternative 3 which has a prescribed buffer), the size of the area to be managed depends on the habitat and requirements of the species. Management Recommendations are developed by taxa experts, using the best available information and knowledge, and are subject to a review process to ensure they are scientifically credible, and meet the level of species management required under the standards and guidelines.

295. Comment: The protection level for *Ramalina thrausta* should be at least Category 1C.

Response: The Species Review Process evaluated current information on the range, distribution, habitat associations, and survey issues for *Ramalina thrausta*. The species was assigned to Category 1A.

296. Comment: The status of *Bryoria tortuosa* should be amended.

Response: In the Draft SEIS, *Bryoria tortuosa* was removed from Survey and Manage east of the crest of the Cascades and assigned to Category 1B west of the crest of the Cascades. The Species Review Process was rerun between the Draft SEIS and the Final SEIS. This second Species Review Process evaluated current information on the range, distribution, habitat associations, and survey issues for *Bryoria tortuosa*. The species was assigned to Category 1A in the Final SEIS for the parts of its range where the species is limited in distribution, suitable habitat is limited, and there are few known sites on federally managed lands (California Coast, Willamette, Western Washington, and Southwest Washington Physiographic Provinces).

297. Comment: The synonym of *Bryoria subcana* (*Alectoria subcana*) should be removed.

Response: This synonym was listed with *Bryoria subcana* for historical context to include older collections where the nomenclature of specimens may not have been updated.

298. Comment: The protection level for *Tholurna dissimilis* should be changed from Category 1B to Category 1A.

Response: The Species Review Process evaluated current information on the range, distribution, habitat associations, and survey issues for *Tholurna dissimilis*. Based on current information, the protection level for *Tholurna dissimilis* did not change between the Draft SEIS and the Final SEIS. In the Final SEIS, *Tholurna dissimilis* is categorized as “off” north of the Columbia River because the Species Review Process determined that the reserve land allocations and other provisions of the Northwest Forest Plan provide a reasonable assurance of persistence in this part of its range. *Tholurna dissimilis* is in Category 1B in Alternative 1 south of the Columbia River. The three known sites from Oregon occur in habitats near timberline. If this is typical habitat for the species, then it may be observed at these sites if access is not a limiting factor. However, the recent observations of *Tholurna dissimilis* in the dead tops of old-growth Douglas-fir at the Wind River Experimental Forest Canopy Crane site is evidence this species occurs in tree canopies outside of timberline habitats and at lower elevations. This habitat is, for the most part, inaccessible and extremely difficult to survey. The habitat and survey factors were considered and it was determined that *Tholurna dissimilis* did not meet the criteria for practical surveys prior to habitat-disturbing activities. *Tholurna dissimilis* will be included in strategic survey efforts in Oregon.

299. Comment: *Usnea longissima* should not be removed from the Survey and Manage Standards and Guidelines.

Response: The Species Review Process evaluated current information on the range, distribution, number of known sites, and habitat associations for *Usnea longissima*. Following evaluation of

current information, *Usnea longissima* was not removed from the Survey and Manage Standards and Guidelines. It was assigned to Category 1A in California and in Curry, Josephine, and Jackson Counties in Oregon because of the low number of recent sites on federally managed land. In Washington, and in Oregon outside of Curry, Josephine, and Jackson Counties, *Usnea longissima* was assigned to Category 1F to permit strategic surveys to help determine if the reserve land allocations provide a reasonable assurance of species persistence which is one of the basic criteria for a species to be included in Survey and Manage. The factors that support the assignment of *Usnea longissima* to Category 1F are its widespread distribution, a moderately high number of recent sites documented in the Northwest Forest Plan area, a high number of known sites that occur within reserve land allocations, and a moderate likelihood of habitat occurring in the reserve land allocations.

300. Comment: *Stenocybe major* should require additional strategic surveys.

Response: The Species Review Process evaluated current information on the range, distribution, number of known sites, and habitat associations for *Stenocybe major*. This species was removed from Survey and Manage because the habitat information indicates this species does not meet the criteria of close association with late-successional and old-growth forests, as all known sites were reported from younger stands. Additional strategic surveys for *Stenocybe major* are not needed.

301. Comment: *Buxbaumia piperi* should be included as an uncommon species, not removed from the Survey and Manage Standards and Guidelines.

Response: *Buxbaumia piperi* was included as a Protection Buffer species in the Northwest Forest Plan ROD. It was not on Survey and Manage. Under the Scientific Analysis Team species evaluation in 1993, *B. piperi* was evaluated in a group of five mosses which were grouped because they occur in similar habitat. The notes from the panel of scientific experts indicate that the panel thought the species in this group were rare, except for *B. piperi*. Inclusion of *B. piperi* as a Protection Buffer species was an oversight and it was removed from the Protection Buffer Standards and Guidelines on July 26, 1996.

302. Comment: The Agencies should explain how the information gathered since 1994 was used to reorganize the lichens into new categories.

Response: The Species Review Process is explained in detail in Appendix F. The primary reasons for assigning species into categories is explained in Table F-2.

303. Comment: Pre-disturbance surveys should be completed for lichens because they are easier to locate than fungi.

Response: The Species Review Process evaluated current information regarding survey issues for all Survey and Manage species and this information is included in the administrative record. Step 2 panels responded to various questions regarding the practicality of surveys for the lichen species. This information was used to determine if surveys prior to habitat-disturbing activities were “practical.” The factors considered in evaluating the practicality of surveys prior to habitat-disturbing activities are stated in Chapter 2.

304. Comment: Cyanolichens should be included in all equivalent-effort surveys.

Response: The Species Review Process evaluated current information on range, distribution, number of known sites, and habitat associations for the cyanolichen species. It was determined that some of these species do not meet one or more of the three basic criteria for inclusion under the Survey and Manage Standards and Guidelines (see Table F-2). Some of the cyanolichens were removed from Survey and Manage because it was determined that the reserve land allocations and other provisions of the Northwest Forest Plan provide a reasonable assurance of species persistence. The factors that support this conclusion are widespread distributions, a moderate to high number of recent sites documented in the Northwest Forest Plan area, a high number of

known sites occur within reserve land allocations, and a moderate to high likelihood of habitat occurring in the reserve land allocations. Other species of cyanolichens were removed from Survey and Manage because they did not meet the criteria of close association with late-successional and old-growth forests. For cyanolichens that are removed from the Survey and Manage Standards and Guidelines, equivalent-effort surveys will not occur. Species of cyanolichens that meet the basic criteria for Survey and Manage will be included in strategic surveys. Depending on category assignment, cyanolichens on Survey and Manage may be included in pre-disturbance surveys.

305. Comment: The Agencies should recognize that cyanolichens are important for reasons other than air quality.

Response: This SEIS focuses on Survey and Manage species closely associated or thought to be closely associated with late-successional or old-growth forest. It has been determined that many of the cyanolichens do not meet the basic criteria for being included in the Survey and Manage Standards and Guidelines under the action alternatives. “Importance” of a species is not a criteria used in determining whether or not to include it under Survey and Manage.

306. Comment: The Agencies should continue to survey for aquatic lichen species.

Response: The Species Review Process evaluated current information on range, distribution, number of known sites, and habitat associations for aquatic lichen species. *Leptogium rivale* and *Dermatocarpon luridum* are in Category 1B and strategic surveys will continue. The Species Review Process concluded that the reserve land allocations, Aquatic Conservation Strategy, and other provisions of the Northwest Forest Plan provide a reasonable assurance of persistence for *Hydrothyria venosa* and it is proposed to be removed from Survey and Manage (see Table F-2).

307. Comment: *Cetrelia cetrarioides* needs monitoring for records of distribution.

Response: Distribution of this species and associated information is tracked in the Interagency Species Management System (ISMS) database. The Species Review Process evaluated current information on range, distribution, number of known sites, and habitat associations for *Cetrelia cetrarioides*. The species was assigned to Category 1E because there was a low number of recent sites on federally managed lands in the Northwest Forest Plan area and it is uncertain if the species meets the criteria for close association with late-successional and old-growth forests (see Table F-2).

308. Comment: *Dendriscoaulon intricatum* needs monitoring for records of distribution.

Response: Distribution of this species and associated information is tracked in the ISMS database. The Species Review Process evaluated current information on range, distribution, number of known sites, and habitat associations for *Dendriscoaulon intricatum*. The species was assigned to Category 1B because of the moderate number of recent sites on federally managed land in the Northwest Forest Plan area, although species abundance is reported as low at known sites (see Table F-2). It was determined that surveys prior to habitat-disturbing activities were not practical because of the difficulty detecting the species at a site given its very small size.

309. Comment: Updated species nomenclature information should be provided.

Response: Nomenclature for lichens is not static. Species names and synonyms are included to provide consistency for the species originally listed in the Northwest Forest Plan and for reference to track name changes. Synonyms for species are included and tracked in the ISMS database and are updated as indicated by publication in the scientific literature.

310. Comment: *Cladonia norvegica* is common in Washington and should be removed from Survey and Manage.

Response: The Species Review Process had limited information on *Cladonia norvegica* within the Northwest Forest Plan area, even though a recent search of regional herbaria was conducted for collections of this species. *Cladonia norvegica* was assigned to Category 1B based on the current available information on its range, distribution, number of known sites, and habitat associations (see Table F-2). When additional information becomes available, this species will be reviewed through the adaptive management process discussed in Chapter 2.

311. Comment: *Hypogymnia duplicata* should not be rated as rare.

Response: The Species Review Process evaluated current information on range, distribution, number of known sites, and habitat associations for *Hypogymnia duplicata*. The majority of known sites are reported from the Mt. Baker-Snoqualmie National Forest where it occurs primarily in high precipitation areas at upper elevations in the Mountain Hemlock zone (Lichen Management Recommendations, ISMS). It was determined that the species met the criteria for Category 1A (i.e. rare) because of the low to moderate number of known sites, the typically low number of individuals at a site, the relatively narrow habitat association of the species, and the spotty distribution of populations. Current information indicates *Hypogymnia duplicata* becomes increasingly rare from the Snoqualmie River drainage south to the southern limit of its known range in Oregon. When additional information becomes available, this species will be reviewed through the adaptive management process discussed in Chapter 2.

312. Comment: *Dendriscoaulon intricatum* is a rare species and surveys are practical. It should be in Category 1A.

Response: The Species Review Process evaluated current information on range, distribution, number of known sites, and habitat associations for *Dendriscoaulon intricatum*. The species was assigned to Category 1B (see Table F-2). The criteria for determining practicality of surveys prior to habitat-disturbing activities were evaluated for *Dendriscoaulon intricatum*. It was determined that surveys prior to habitat-disturbing activities were not practical because of the difficulty detecting this species at a site given its very small size.

313. Comment: The proposal to remove *Hypogymnia oceanica* from Survey and Manage should be re-examined.

Response: *Hypogymnia oceanica* was re-examined during the Species Review Process in March 2000, using current information on range, distribution, number of known sites, abundance, and habitat associations. The species was assigned to Category 1F to permit additional strategic surveys to help determine what management is needed to meet persistence objectives or to determine if the reserve land allocations provide a reasonable assurance of species persistence. The factors that support the assignment of *Hypogymnia oceanica* are the moderate to high number of recent sites on federally managed land, with a large increase in the number of sites reported since 1993, and a substantial increase in the known geographic distribution of the species. The species is also reported as having a broad habitat association, with a moderate likelihood of suitable habitat in reserve land allocations. However, there is limited information available on the species' abundance at known sites. Because of the small population sizes reported from a few known sites, there is uncertainty what management is needed to meet persistence objectives.

Vascular Plants

314. Comment: *Allotropa virgata* should be considered an uncommon species.

Response: The Species Review Process conducted in 1999 and repeated in March 2000 determined that *Allotropa virgata* did not meet the three basic criteria for inclusion under the Survey and Manage Standards and Guidelines. The primary reasons for this conclusion are listed on Table F-2.

Birds

315. Comment: The Agencies should conduct strategic rather than pre-disturbance surveys for great gray owls. Pre-disturbance Survey Protocols may not be adequate to detect sites.

Response: The Agencies will conduct both strategic and pre-disturbance surveys for great gray owls. Survey Protocols are intended to be modified over time to improve their application and the detection rate of the species. Regardless of their adequacy of detection, conducting pre-disturbance surveys reduces the risk of inadvertently destroying nest sites. Strategic surveys will be conducted to obtain additional information about species habitat use, distribution, and management needs. This will improve protection for this species in the future.

316. Comment: The SEIS should provide protection for all current and future great gray owl sites.

Response: The action alternatives specify that the current Protection Buffer direction for great gray owls will be the interim Management Recommendation. Until an updated Management Recommendation is developed identifying high-priority sites, all known nest sites would be managed. An updated Management Recommendation would prescribe management of these sites that is consistent with the current knowledge of the nesting and nearby foraging needs of the species. This management could include meadow maintenance that would promote foraging by this species at forest edges and prevent the loss of foraging habitat from encroachment by conifers and other woody vegetation due to fire exclusion. Although the Management Recommendation could exempt some nest sites from management, this would be evaluated against the need to meet the species persistence objectives throughout its range in the Northwest Forest Plan area.

317. Comment: The Final SEIS needs to clarify the intent of management of great gray owl sites under the proposed new standard and guideline.

Response: The proposed change in the standard and guideline would result in managing some great gray owl sites under the Matrix land allocation. However, the underlying management for the species remains similar to management under the Late-Successional Reserve designation of the current standard and guideline. Small, isolated Late-Successional Reserves created unnecessary and sometimes conflicting guidance. As described in Chapter 1, one of the purposes of this SEIS is to provide clarification of management direction, including consolidation of Protection Buffer Standards and Guidelines into the Survey and Manage Standards and Guidelines to reduce redundancy and conflicting and unnecessary direction. Under this SEIS, management of great gray owl sites would allow more flexibility to address species-specific needs, such as maintenance of forest edge and meadow habitats that provide essential foraging habitat for the species.

318. Comment: The Final SEIS should provide protection to cavity-dependent birds by preserving snag habitat.

Response: The standards and guidelines in this Final SEIS retain the requirement to maintain adequate numbers of large snags and green tree replacements to maintain 100 percent of potential population levels of four species (white-headed woodpecker, black-backed woodpecker, pygmy nuthatch, and flammulated owl). The revised standards and guidelines also indicate that snags over 20 inches dbh may be marked for cutting only after retaining the best available snags (considering size, longevity, etc.) in sufficient numbers to meet 100 percent of potential population levels of these species. Further, the standards and guidelines indicate that appropriate snag numbers to meet this target must include appropriate new information as it becomes available. The specific Northwest Forest Plan direction is redefined as a Management Recommendation so that new information on the management of these species can be more easily incorporated in the future.

319. Comment: The Draft SEIS allows for the removal of some snags greater than 20 inches dbh, which may lead to adverse effects to the black-backed woodpecker, white-headed woodpecker, pygmy nuthatch, and flammulated owl.

Response: The action alternatives strengthen protection measures for these species by providing Management Recommendations that can be improved and updated as new information is acquired. The proposed changes to the standards and guidelines allow for the removal of some large snags. The overall management of snags for these species is likely to improve through: (1) the clearly stated objective to manage for 100 percent population level of these species; (2) the broader application of this standard and guideline to all land allocations; and, (3) the flexible provision to modify actual numbers of snags retained to provide 100 percent levels. The effects discussion has been revised to more clearly state these benefits.

Mammals

320. Comment: The Draft SEIS is much too focused on maintaining buildings, bridges, and caves for bats, while ignoring the fact that most bats roost in crevices and cavities in large trees. The Agencies should incorporate recent information into the standards and guidelines for bats.

Response: The standards and guidelines in the Northwest Forest Plan for Late-Successional and Riparian Reserves provide for the retention of large old trees and snags that provide roosting habitat in crevices and bark fissures. Other standards and guidelines for Matrix also provide for the retention of some of these features through green tree and snag retention in timber harvest areas. Under the action alternatives, the Final SEIS proposes to apply existing Northwest Forest Plan Standards and Guidelines for bats to all land allocations and provide for the future addition of species for which reserves and other standards and guidelines of the Northwest Forest Plan may not provide a reasonable assurance of persistence. Although additional measures could benefit bats, there is no indication at this time that additional measures are needed to meet species management objectives. If information in the future indicates additional measures are needed to provide a reasonable assurance of persistence, such measures may be added following appropriate NEPA analysis.

321. Comment: The Agencies should consider new survey techniques for bat species.

Response: The Agencies have considered recent information indicating surveys requiring species-specific identification are detrimental to bats. These species-specific survey requirements may result in disturbance to bat hibernacula and maternity colonies during critical periods of their life cycle. This standard and guideline is proposed for modification in the action alternatives so that the requirement to complete species-identification surveys that could prove detrimental to roosting bats is removed. Only presence-absence surveys will be required. Presence of any species of bat at the identified structures would require protection of occupied structures, regardless of the species present, unless it can be documented that the structure is *not* occupied by the target species. This interim management direction would be modified when survey techniques are developed that could identify bats by species in a manner that would not be detrimental to the bats in the colony or hibernacula.

322. Comment: Wetlands should be buffered in order to protect bat species.

Response: The standards and guidelines for bats requires management of sites containing bats. All action alternatives would require the preparation of Management Recommendations that would specify protection measures for these occupied sites. Wetlands are not specifically included, but wetlands located adjacent to occupied sites may be afforded additional management due to the proximity of protected bat sites. Riparian Reserves widths for wetlands, including wetlands smaller than 1 acre, are designed to provide for most riparian and wetland functions, including the function of those wetlands as habitat for prey species of bats.

323. Comment: The Agencies have inappropriately excluded a large area of red tree vole habitat from the pre-disturbance survey requirement in the Northwest Forest Plan.

Response: The FEMAT viability rating for red tree vole was almost high enough to preclude its inclusion in Survey and Manage. Appendix J2 of the Northwest Forest Plan noted the inclusion of red tree vole in Survey and Manage was "...largely because of concern that the provisions of Alternative 9 would not adequately provide for connectivity among late-successional patches for dispersal and gene flow" and mentioned provisions that could provide the desired connectivity. For this reason, the Agencies concluded that surveys and site management of red tree voles was not necessary in forest landscapes providing sufficient connectivity habitat. Although the Agencies considered this decision an appropriate one for this species, the U.S. District Court for the Western District of Washington found, in August 1999, that the Northwest Forest Plan Standards and Guidelines did not allow this interpretation. The standards and guidelines for the three action alternatives described in this SEIS would allow for identification of habitats or conditions where, based on knowledge about the species and its habitat needs, pre-disturbance surveys are not needed in order to meet species persistence objectives.

324. Comment: Late-successional forest outside of reserves should be preserved for red tree vole habitat because more than half of all red tree vole sites have been located outside of large reserves.

Response: The reason many red tree vole sites have been found outside of reserves, in apparent disproportion to the acreage of reserves in the Northwest Forest Plan area, is because the majority of survey efforts in the past have been outside of these reserves. These pre-disturbance survey data cannot properly be used to conclude that the reserves are inadequate for red tree voles and must be expanded. Strategic surveys are expected to eventually provide the data necessary to determine the management needs of this species. In the meantime, pre-disturbance surveys are being conducted in project areas to locate sites occupied by red tree voles. Forest stands that are occupied by red tree voles will be identified and appropriately managed as known sites. For all Survey and Manage Component 2 species, including the red tree vole, the Northwest Forest Plan Record of Decision (USDA, USDI 1994b, p. C-5) required "management standards be developed to manage habitat for the species on sites where they are located." An updated Management Recommendation may provide for management of high-priority sites, instead of all known sites. Analysis in the 1994 Northwest Forest Plan Final SEIS, and again in this SEIS, indicates species persistence objectives can be met with this strategy and retention of all late-successional forest outside of reserves is unnecessary. This species' Management Recommendation is currently being revised to address management of both pre-1994 and newly discovered red tree vole sites on federally managed lands.

325. Comment: The Canada lynx should be afforded better protection in the Final SEIS.

Response: At the time the Draft SEIS was released for public comment (December 3, 1999), the Canada lynx was proposed for listing as a threatened species under the Endangered Species Act. The proposed change to management direction under the Draft SEIS action alternatives was to apply existing management direction from the Northwest Forest Plan (including changes to management direction) to all land allocations in habitats where Canada lynx occur. Since that time, the U.S. Fish and Wildlife Service listed the species as threatened throughout its range in the conterminous United States. Recent information collected from extensive regional surveys, implemented under the existing standard and guideline, have improved the understanding of the range of the species in Oregon and Washington. Recently, the mapped location of lynx habitat within the planning area has been updated to reflect new information on lynx locations, both for resident lynx and presumed transient individuals, and to apply updated criteria that more accurately describes suitable habitat. In addition, both the Forest Service and BLM have entered into conservation agreements with the U.S. Fish and Wildlife Service to further the conservation of the species on federal lands.

Based on this change in the species' status under the Endangered Species Act and new knowledge related to the species range, the proposed standard and guideline for Canada lynx under the action

alternatives in the Final SEIS has been modified. The revised standard and guideline includes additional management consistent with legal requirements under the Endangered Species Act and the needs to ensure the persistence of the species. This includes measures identified in the recently completed Lynx Conservation Assessment and Strategy, which was developed by an interagency team of biologists and lynx specialists. This Lynx Conservation Assessment and Strategy includes recommendations for prey habitat, management of human recreation-caused disturbance, and monitoring of populations, among other goals. The reader is referred to the Canada Lynx Standard and Guideline in Chapter 2, and the effects section of Chapter 3&4, for a detailed description of proposed management direction and an analysis of the likely environmental consequences to the species.

326. Comment: The SEIS should classify Canada lynx according to the most recent designation.

Response: This Final SEIS does consider the most recent designation for Canada lynx. Effective April 24, 2000, the Canada lynx was listed as a threatened species throughout its range in the conterminous United States. Critical habitat has not been designated at this time. As a listed species, activities conducted by federal agencies that “may affect” this species must undergo section 7 Endangered Species Act consultation with the U.S. Fish and Wildlife Service. Activities should also be designed to ensure that they do not jeopardize the continued existence of the species.

Between the Draft SEIS and the Final SEIS, the discussion on lynx has been rewritten to reflect the species’ listed status and legal protection mandates. Additionally, the document has been reorganized to move the discussion of lynx to the Threatened and Endangered Species section from its previous location in the Late-Successional Mammals section.

327. Comment: Wolverines should be given adequate protection in the amended plan.

Response: The wolverine was not identified as a species in need of additional protection in the Northwest Forest Plan ROD, Final SEIS, or Appendix J2. A landscape of large reserves and standards and guidelines applicable to the intervening forest Matrix were deemed adequate to provide for the species needs related to late-successional forests.

328. Comment: The Agencies should ensure the viability of late-successional mammals.

Response: Meeting the NFMA viability provision for all vertebrate species is part of the Purpose statement of this SEIS.

Mollusks

329. Comment: The Agencies should remove *Oreohelix* n. sp. and other species not closely associated with late-successional forest from Survey and Manage.

Response: The Species Review Process was rerun between the Draft SEIS and the Final SEIS. See Appendix F for a detailed discussion of the Species Review Process and Table F-2 for the results of that analysis. Based on the best available data relative to the range, distribution, and number of known sites, *Oreohelix* n. sp. (Chelan mountainsnail) is assigned to Category 1A throughout its range within the Northwest Forest Plan area in Alternative 1. The number of sites is still considered low to moderate and there is still a concern for persistence. For a variety of reasons related to site management and species’ biology, the definition of a “site” or record in the ISMS database varies by taxa group, particularly for the terrestrial mollusks. The Species Review Process was fully aware of this potential inconsistency and considered the information for terrestrial mollusks accordingly.

According to the data available to the taxa team, the *Oreohelix* n. sp. is generally found in older stands with a fairly dense understory of grasses and scattered shrubs. Thus, it is considered to be

associated with late-successional stages within the dry forest type of its range within the Northwest Forest Plan area.

330. Comment: All sites for *Hemphillia malonei* should be managed until the species classification is resolved and the distribution and habitat of each variant is better understood.

Response: The Species Review Process was rerun between the Draft SEIS and the Final SEIS. See Appendix F for a detailed discussion of the Species Review Process and Table F-2 for the results of that analysis. Based on the best available data relative to the range, distribution, and number of known sites, *Hemphillia malonei* is assigned to Category 1C throughout its range within the Northwest Forest Plan area in Alternative 1. The number of sites is moderate. In Category 1C, pre-disturbance surveys will continue and all known sites will be managed until high-priority sites are identified.

331. Comment: The Agencies should review the distribution of *Monadenia churchi* before categorizing it as uncommon rather than rare and assess the use of strategic surveys as opposed to pre-disturbance surveys.

Response: The Species Review Process was rerun between the Draft SEIS and the Final SEIS. See Appendix F for a detailed discussion of the Species Review Process and Table F-2 for the results of that analysis. Based on the best available data relative to the range, distribution, and number of known sites, *Monadenia churchi* is assigned to Category 1F throughout its range within the Northwest Forest Plan area in Alternative 1. The number of known sites on federally administered lands is considered high. Additionally, strategic surveys can occur in a variety of habitats, such as random plot surveys, to assess distribution of species in a variety of habitats and land allocations.

332. Comment: The protection level for the mollusk *Monadenia churchi*, which is common in California, should be changed from Category 1C to Category 1D or 1F.

Response: *Monadenia churchi* is an endemic species which is common within its range. Its range is confined primarily to two counties in California with a few rare occurrences in adjacent areas. Data indicates the average age of stands in which it occurs are older than 105 years. No specific riparian association is indicated by the current data. *Monadenia churchi* is assigned to Category 1F throughout its range within the Northwest Forest Plan area in Alternative 1.

333. Comment: Valid range extension data for species should be acquired and utilized in the Final SEIS.

Response: The Species Review Process was rerun between the Draft SEIS and Final SEIS. The best available data was provided to that team and was used during the review process.

334. Comment: The definition of “site” is so loose that it includes multiple sites.

Response: The inconsistency in site definition between mollusk records and other Survey and Manage taxa groups is recognized and was considered during the Species Review Process. As indicated in Appendix F, the number of records for some terrestrial mollusks was adjusted to account for the differences in site definitions.

335. Comment: As a great many of the specific species reports were not verified by qualified experts, nor vouchered, we do not think they are valid.

Response: Specimen verification was based on formally-described taxa only, and specimens which best fit the formally-accepted description of a Survey and Manage species were recorded as such. It is recognized that there may be additional undescribed species occurring in the areas where Survey and Manage species are found. Agency specialists recognize that multiple species within a complex may be involved for some records; for consistency, species identification was

based on recognized taxa only. Recently-trained survey teams may not be familiar with a taxa group that is not well described within the Northwest Forest Plan area, and few specialists submit new information for formal peer review. Training of surveyors is conducted by both “in-house” experts and under contract by recognized experts within the field. However, a process has been initiated to confirm specimen identifications. Individuals familiar with the molluscan fauna of specific regions within the Northwest Forest Plan area are designated as screeners (taxa specialists) who review specimens found by surveyors. After examination of a specimen, if the screener cannot identify it, the specimen is forwarded to a consulting malacologist under contract for this purpose.

336. Comment: The range extension for *Cryptomastix hendersoni* is not acceptable.

Response: Agency taxa specialists also question the identification of the Mt. Hood National Forest specimens of *C. hendersoni*. However, since there is no formally described species which these specimens more closely resemble, they have been identified as *C. hendersoni*. The only change from the No-Action Alternative proposed for this species is to add strategic surveys which could result in better understanding of the species and the potential variants.

337. Comment: The historic records for *Prophysaon coeruleum* do not represent known records from museums, etc.

Response: The recorded historic sites are those from the original known sites database which included only those records found in the collections of major museums in the United States. We understand that there are other reports of the species (in the writings of such authors as Pilsbry, Branson, and Henderson), but for various reasons the details of these records were not found and entered into the known site database.

338. Comment: *Prophysaon coeruleum* should be recognized as a species complex rather than a single species.

Response: The Agencies’ taxa experts recognize the possibility that records for *P. coeruleum* in agency databases may represent a species complex and may include other undescribed taxa. Since there is no formally described species which these specimens more closely resemble, they have been identified and recorded as *P. coeruleum*, per the Survey Protocol. There is also the probability that a “high elevation” new genus was recorded as *P. coeruleum*. All of this information is discussed in Chapter 3&4 so that an option of retaining this species on Survey and Manage may be considered by the decision-makers. However, as presented in Chapter 3&4, there is only one described species in the scientific literature at this point in time and the action alternatives treat it as a single, published species, consistent with the NFP ROD. If additional species are described in the future, these (or *P. coeruleum*) may be considered for addition to Survey and Manage.

339. Comment: Any increase in known sites for *Monadenia fidelis minor* is not acceptable.

Response: As with *Cryptomastix hendersoni*, there may be another undescribed species that could reasonably be identified as *M. fidelis minor*. Specimens were identified from shells only and no living animals have been found to date at the new location. Since these specimens were found near to the range of *M. fidelis minor* and no other formally-described species more closely fits the description of the shells found, the specimens were recorded as *M. fidelis minor*. Live specimens may be needed to confirm that specimens from the new areas are not *M. fidelis minor*. Since they were recorded as such, they were entered into the database. The ISMS database can easily be corrected if the population proves to be another species. In any event, no change in the status of *M. fidelis minor* was proposed based on this data.

340. Comment: The reported number of sites for *Helminthoglypta talmadgei*, *Helminthoglypta hertleini*, and *Hemphillia glandulosa* are not valid.

Response: *Helminthoglypta talmadgei* and *H. hertleini* were both assigned to Category 1A in the Draft SEIS, which requires management of known sites and both pre-disturbance and strategic surveys. In the Final SEIS, *H. hertleini* was changed to Category 1B which indicates that pre-disturbance surveys are “not practical.” Currently known sites will continue to be managed and strategic surveys will be conducted. *H. talmadgei* remains in Category 1A and no decrease in the overall level of species management is proposed. Pre-disturbance surveys will continue and all known sites will be managed, as in the No-Action Alternative. In addition, the action alternatives include provisions for strategic surveys.

Based on the current formal description for the species, the increase in sites for *Hemphillia glandulosa* is valid. Unlike some of the other species under discussion, the taxa specialists are not aware of any work in-progress which would determine whether this is a separate taxon. Prior to the FEMAT report, Branson and Branson (1984) reported a possible record of *H. glandulosa* for the Oregon Coast Range. If this report is considered, the range extension is not as great. Numerous specimens conforming to *H. glandulosa* have been found in younger stands and the species appears to be locally common in parts of the northern Oregon Coast Range. The population reported in the Oregon Cascades was not checked by the Agencies taxa specialists prior to the reports being submitted to the database and is now thought to be erroneous. *Hemphillia glandulosa* was changed from Category 1A in the Draft SEIS to Category 1C in the Final SEIS. This change recognizes the species as uncommon, pre-disturbance surveys will continue, and all known sites will be managed until high-priority sites can be determined.

341. Comment: The reported number of sites for *Cryptomastix devia* and *Megomphix hemphilli* are not valid.

Response: The suspected range increase for *Cryptomastix devia* has not been verified. The action alternatives retain all of the Survey and Manage requirements from the No-Action Alternative and add strategic surveys. While the range of *Megomphix hemphilli* was originally considered to extend farther north than its current distribution, it is now known some of the records responsible for that suspected range change were from erroneous identifications. It does occur as far north as the south end of Puget Sound and populations in Oregon are much larger than previously suspected. Because of the preponderance of reports for this species in southern Oregon, its range was split in the Final SEIS. Northern populations are assigned to Category 1A, which will receive known site management, pre-disturbance surveys, and strategic surveys. The more numerous southern population has been assigned to Category 1F where it will receive strategic surveys only.

342. Comment: The reported increases in *Hemphillia malonei* and *Monadenia churchi* sites are ridiculous and presumably do not record population but site counts, again largely unverified.

Response: Database records indicate an increase in *Hemphillia malonei* records from 46 to 213 records in 1999. The range in Oregon probably has not been extended beyond what was expected in the Northwest Forest Plan. The range in Washington has been extended. It is recognized that the specimens found north of the Columbia Gorge differ in appearance from those found in the Columbia Gorge. Based on external characteristics, they key out to be *H. malonei*; no other similar jumping-slug has yet been described. The Agencies' taxa experts also recognize that database records for *Monadenia churchi* may include one or more undescribed species. Since there are no other formally-described species, these records have been treated as *M. churchi* for the purposes of analysis.

343. Comment: The range extensions and reported sites for *Prophysaon coeruleum* and *Prophysaon dubium* are in error.

Response: All specimens which conform to the formal description of *Prophysaon coeruleum* have been considered as a single species for purposes of analysis and the range has been subdivided in the SEIS. In Washington and California, the species has been assigned to Category 1A and will be subject to pre-disturbance surveys. All known sites will continue to be managed. Strategic surveys will also be conducted. In Oregon, the species will be removed from Survey and Manage.

The range of *Prophysaon dubium* has been expanded into the eastern Washington Cascades, but its range in western Washington has not been shown to extend as far north as expected. Overall, the range of *P. dubium* is smaller than previously described. However, throughout its range it has been found in greater numbers than expected. In the SEIS, *P. dubium* has been removed from Survey and Manage because the mitigation measure is not needed to provide a reasonable assurance of persistence.

344. Comment: The boundaries for the range of *Prophysaon coeruleum* should be expanded and the different variants clarified. This species should be divided into two separate ranges.

Response: The Species Review Process was rerun between the Draft SEIS and the Final SEIS. See Appendix F for a detailed discussion of the Species Review Process and Table F-2 for the results of that analysis. Based on the best available data relative to the range, distribution, and number of known sites, *Prophysaon coeruleum* has been divided into two separate management ranges, though different than suggested. In Oregon, *Prophysaon coeruleum* has been removed from the Survey and Manage mitigation measure because of the large number of known sites on federally managed lands and the likelihood of habitat in reserve land allocations. In Washington and California, *Prophysaon coeruleum* is assigned to Category 1A because of the low number of known sites on federally managed lands.

345. Comment: Due to its rarity, pre-disturbance surveys should be required for *Hemphillia pantherina*.

Response: Pre-disturbance surveys for *Hemphillia pantherina* are considered not practical and it is assigned to Category 1B in Alternative 1. Only one site has been located on federally managed lands since 1994. Equivalent-effort surveys are required under Alternative 3. Species rarity is not a criterion for determining practicality of survey.

346. Comment: The Agencies should clarify information regarding *Pristiloma arcticum*.

Response: At the time of the FEMAT analysis, only one location for *Pristiloma arcticum crateris* was publicly known, although additional specimens may exist in private collections. A second historic site in the Metolius River watershed was discovered in the collection of Dr. Barry Roth. The Multnomah County site was found during a mollusk survey training field trip in 1997 or 1998. While there is no argument about the difficulty of surveying for this species, the problem arises in expecting field crews to identify the species. Most specimens of any species of *Pristiloma* have been forwarded to taxa specialists for identification and those specimens considered to be *Pristiloma arcticum crateris* by the taxa specialists have been forwarded on to consulting malacologists for confirmation.

347. Comment: The Agencies should expand the protection of *Monadenia fidelis ochromphalus* and *Ancotrema voyanum*.

Response: The Species Review Process was rerun between the Draft SEIS and the Final SEIS. In the Final SEIS, *Monadenia fidelis ochromphalus* has been changed from Category 1F to Category 1B. *Ancotrema voyanum* has been changed from Category 1F to Category 1E. In both cases, these category changes result in increased management for these species.

348. Comment: Alternative 3 provides the best assurance of individual species persistence for mollusks because it requires pre-disturbance surveys and a larger site buffer. Alternative 3 ensures the best protection of the range and distribution of these species

Response: With mollusks and for other rare species, the 250-meter buffers are arguably better and more consistent than the known site buffers designated under the other alternatives. However, since the known site buffers for Alternatives 1 and 2 are required to be big enough to maintain suitable conditions sufficient to provide a reasonable likelihood of persistence of the species at the site, there should not be a substantial difference in this aspect of the alternatives. The suitable

habitat conditions at a site include a specific set of ecological conditions which may not be limited to an undisturbed stand of trees. For some Survey and Manage species, detection rates are not clearly higher in undisturbed areas or areas entirely within interior forests conditions. Many known sites are well within 250 meters of a road edge or other forest stand disturbance zone.

Alternative 3 includes equivalent-effort surveys for some mollusk species considered not practical for pre-disturbance surveys in Alternatives 1 and 2 and the No-Action Alternative. The equivalent-effort surveys will undoubtedly provide more protection for these species, and like the 250-meter buffers addressed above, that difference is described in the effects section of Chapter 3&4. Other alternatives may meet persistence objectives for these species as well. It will be up to the decision-makers to decide if the extra effort required for 250-meter buffers and equivalent-effort surveys are necessary and appropriate.

349. Comment: The Agencies should not doubt association of aquatic taxa in Table F-2 with old-growth forests.

Response: There appears to be doubt that some aquatic species are associated with old-growth forests. However, in the absence of clear evidence to the contrary, the potential association with late-successional habitats determined by FEMAT was not changed for the aquatic mollusk species during the Species Review Process. Strategic surveys could help confirm or deny this association.

Late-Successional Species

350. Comment: The Agencies should reduce wildlife habitat fragmentation from logging and emphasize connectivity.

Response: Habitat fragmentation is an issue that has been addressed in the Northwest Forest Plan Final SEIS. The system of Late-Successional Reserves, green tree retention, and Riparian Reserves were established by the Northwest Forest Plan Final SEIS to address fragmentation at the landscape scale. The Survey and Manage SEIS does not substantively change the baseline for that analysis and additional analysis of this issue is not required at this time. The Survey and Manage Standards and Guidelines were developed to improve the distribution and stability of certain species not able to fully benefit from landscape-scale management due to their highly localized populations or limited mobility. Management of known sites for Survey and Manage species according to species-specific Management Recommendations provides for buffer widths and other management practices that protect known sites from adverse impacts due to fragmentation.

351. Comment: The Agencies should emphasize retaining structural diversity important for wildlife species.

Response: The retention of structural diversity in late-successional forests in general is an issue that has been addressed through the Northwest Forest Plan Final SEIS. The Survey and Manage SEIS does not substantively change the baseline for that analysis and additional analysis is not required at this time. In this SEIS, structural diversity and other habitat characteristics necessary for the management of occupied sites for Survey and Manage species is defined and retained through the design and implementation of Management Recommendations. This management is based, in part, on information obtained through strategic surveys and research.

Species Associated with Early-Successional Forest

352. Comment: Increased protection should be given to early-successional ecosystems.

Response: Forest stands in Matrix and Adaptive Management Area land allocations will continue to provide early-successional stages of forest development for a period following regeneration harvest. Natural disturbance processes, such as wildfire, wind, and pathogens, will provide some

early-successional habitat across all land allocations on an irregular basis. Regeneration harvest on nonfederal lands is expected to continue and, although not part of the planning area, occur immediately adjacent to Forest Service and BLM administered lands. These disturbances will continue to provide habitat for early-successional species when considered in a cumulative effects sense across the larger planning landscape. Some other activities specifically promote maintenance of early-successional habitat. For example, some prescribed fire activities in natural meadows are designed to remove encroaching woody vegetation. Management of known sites of Survey and Manage species is not expected to substantially alter the availability of early-successional habitat from that assumed in the Northwest Forest Plan Final SEIS.

Threatened and Endangered Species

353. Comment: The Agencies should protect threatened and endangered species' habitat.

Response: The Northwest Forest Plan provides for the management of habitat, including old-growth forest, for species listed under the Endangered Species Act, in a series of Late-Successional Reserves. This system of reserves, plus the standards and guidelines for managing the Matrix between reserves, was considered to be adequate to provide for the conservation and recovery of marbled murrelets, spotted owls, and other listed species on federally managed lands. Although the Northwest Forest Plan allows for the harvest of some late-successional and old-growth forest stands in the Matrix, this harvest is not likely to preclude the recovery of murrelets, spotted owls, or other listed species in this area. None of the alternatives being considered under this SEIS would result in a substantive change to the design or implementation of this strategy or to the conclusions reached in the Northwest Forest Plan Final SEIS.

354. Comment: The Final SEIS should link significant, locally-adapted populations with criteria from the Endangered Species Act (such as "evolutionary significant units" or ESUs).

Response: All action alternatives provide for the management of species or subspecies in all or part of their ranges, although not specifically identifying these significant populations as "evolutionary significant units." A concern for persistence has been identified for some species or subspecies for a portion of their range based upon more localized concerns for their persistence. For example, the lichen *Lobaria oregana* has been removed from Survey and Manage in Oregon and Washington. In the California portion of its range, it has been retained on Survey and Manage in Category 1A, based on the low number of recent sites in that area. This approach is consistent with the Endangered Species Act requirements to conserve species at the population level.

355. Comment: The Final SEIS should have a more thorough analysis of the effect on threatened, endangered, and sensitive species.

Response: The Northwest Forest Plan Final SEIS analysis of species listed under the Endangered Species Act assumed that the contribution to their survival from the management of Survey and Manage species sites would be minimal. This conclusion was based on: (1) assumptions that the amount of late-successional habitat that would be managed as Survey and Manage species known sites would be minimal compared to the 24.5 million acres of federally managed lands within the range of the northern spotted owl; (2) the fact that most of the actual locations of Survey and Manage species' sites were generally unknown and unpredictable at the time the Northwest Forest Plan consultation was conducted; and, (3) the fact that managed sites are mostly in patches as small as 2 acres. The Biological Opinion for that consultation did not anticipate a specified amount of incidental take, but rather deferred the discussion of incidental take to consultation for specific and programmatic activities that would be conducted under the Northwest Forest Plan.

Since the adoption of the Northwest Forest Plan, additional species have been listed under the Endangered Species Act (e.g., bull trout). However, similar conclusions have been reached regarding the contributions of Survey and Manage known sites to the conservation of these species.

Under the action alternatives, approximately 24,800 acres of forested habitat in Matrix and Adaptive Management Area land allocations would be returned to the underlying land allocation, due to the removal of 72 species from Survey and Manage in all or part of their ranges. If all 24,800 acres are returned to underlying allocations, this would represent about 0.10 percent of total federally managed forest habitat in the range of the northern spotted owl. In contrast, during the past 6 years of Northwest Forest Plan implementation, approximately 200,000 acres of Matrix, much of it currently in late-successional forest condition, has been reallocated to Riparian Reserves, based upon efforts to locate and more precisely map the reserves associated with intermittent and small perennial streams that had not previously been identified.

For the above-stated reasons, the analysis of effects for listed species from the Northwest Forest Plan Final SEIS concluded that no substantial contribution would accrue to listed species from the management of known sites for Survey and Manage species. The removal of 72 species from all or part of their range, and the return of 24,800 acres of late-successional habitat to the underlying land allocation should, therefore, not be considered as a change in the environmental baseline for listed species. Hence, none of the action alternatives should result in changes to the status or the likely effects to listed species in the Northwest Forest Plan area. The effects analysis for species listed under the Endangered Species Act in Chapter 3&4 has been improved to more clearly state this conclusion.

356. Comment: Spotted owl habitats should be protected. The reserves do not contain all of the old growth that is needed. Old-growth forests in the Matrix, that are being used as habitat, should not be destroyed.

Response: The Northwest Forest Plan provides for the management of habitat for spotted owls, arranged in a network of closely spaced reserves distributed throughout the range of the owl. The network was designed to be extensive and somewhat redundant, such that individual reserves could be recolonized by owls from adjacent reserves if natural events caused a local extirpation. These reserves in the Northwest Forest Plan area (the Late-Successional Reserves) included and replaced most areas that had previously been identified for spotted owl management under interim guidance, plus additional areas designed to meet other late-successional species objectives. This SEIS does not propose to alter the network of reserves.

Spotted owls typically occur in areas where landscapes include a mixture of old-forest and younger-forest types. This is true of spotted owls in managed landscapes as well as in “unmanaged” landscapes in wilderness areas. Recent research in northern California has even suggested that spotted owls may prefer old-forest areas that are somewhat fragmented by openings (Franklin et al. 1999). Bart and Forsman (1992) emphasized that they could not differentiate statistically between reproductive rates and population density of spotted owls in areas with 21-60 percent old forest versus areas with greater than 60 percent old forest. Only when the amount of old-forest habitat was less than 20 percent could Bart and Forsman (1992) show a statistical decline in owl numbers or fecundity (number of female young produced per adult female in the population). Therefore, it is a mistake to assume that reserves that are less than fully stocked with old forests will fail to perform their function for spotted owls. These data suggest that reserves that include a mixture of old-forest and younger-forest types may function for spotted owls just as well as reserves that consist of unbroken expanses of old forest.

However, the level of management of habitat for spotted owls was established in the Northwest Forest Plan and is outside the scope of this SEIS.

357. Comment: The Agencies should address inconsistencies in incidental take and apparent spotted owl declines in the Draft SEIS. Franklins’ report may indicate that fecundity levels are stabilizing. Is this conclusion universally applicable?

Response: “Incidental take” of wildlife is take that occurs incidental to otherwise lawfully conducted activities. The term “take” is defined in section 3(19) of the Endangered Species Act to

mean “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”

The terms “harass” and “harm” are further defined by U.S. Fish and Wildlife Service regulations at 50 CFR 17.3 as follows:

- Harass means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering.
- Harm means an act which actually kills or injures wildlife. Such acts may include significant modification or degradation of habitat when it actually kills or injures wildlife by significantly impairing behavioral patterns including breeding, feeding, or sheltering.

If modification of suitable habitat would likely result in death or injury, the species would be “harmed.” Therefore, “incidental take” does not require that an owl is actually killed or displaced. Rather, it means that an owl may be negatively impacted in some way that reduces its chances for survival or reproduction. Incidental take permits are issued for many activities that have little or no impact on owl habitat, but may have impacts to owls based on behavioral disturbance. Of the recent incidental take permits issued to the Willamette National Forest, for example, only about half involve actual removal of owl habitat (Forsman pers. comm.). In addition, many of the incidental take permits for removal of owl habitat are never acted on because of legal challenges and other considerations. Therefore, a simple tally of the number of incidental take permits issued does not directly correlate to the actual rate of loss of owls, whether through loss of habitat or other impacts.

A recent meta-analysis conducted on all 16 spotted owl demographic study areas in Oregon, Washington, and northern California indicates that female survival rates and reproductive rates were not declining over time (Franklin et al. 1999). This result is based on many different studies from throughout the range of the northern spotted owl. It appears the analysis provides evidence that the pattern observed by Franklin and others (1999) may be applicable to many areas within the range of the owl.

358. Comment: The SEIS needs to consider additional information relevant to the conservation of the northern spotted owl, specifically the development of a 4(d) rule, the recent completion of several Habitat Conservation Plans, and the “No Surprises Rule” on nonfederal lands throughout the Northwest Forest Plan area.

Response: The analysis of effects on spotted owls discussed in this SEIS is limited to the effects of the proposed action (modifications to Survey and Manage and related mitigation measures). Standards and guidelines that provide the primary benefits to the spotted owl (such as Late-Successional Reserves, Riparian Reserves, and green tree retention) are not being modified as part of this proposed action. Re-analysis of Northwest Forest Plan owl conservation measures that are a result of changed or new information on nonfederal lands is beyond the scope of this SEIS.

In any case, the approval of Habitat Conservation Plans within the Northwest Forest Plan area do not constitute new information requiring a supplemental environmental impact statement. While the Northwest Forest Plan Final SEIS may have anticipated publication of a Section 4(d) rule, the conservation strategy did not depend on any such rule, nor were any assumptions regarding the contribution of nonfederal lands relied upon in the analysis of effects on spotted owls. What a 4(d) rule does is to allow incidental take of a listed species to occur in certain geographical areas or circumstances. The discussion of this rule in the Northwest Forest Plan was in the context of whether the adoption of such a rule would have a greater than anticipated effect than the assumption that spotted owls presently existing on nonfederal lands would be protected by the Endangered Species Act. The assumption was made that the U.S. Fish and Wildlife Service, in

adopting a 4(d) rule, would continue protection against take on the nonfederal lands deemed important to owl conservation. (See Northwest Forest Plan Final SEIS, pp. 3&4-244 to 3&4-245.) The fact that no 4(d) rule has been promulgated is actually consistent with the assumption, since the absence of such a rule means that the Endangered Species Act prohibitions are in place on all lands within the species range. However, a summary of recent HCPs within the planning area is included in the Cumulative Impacts section in Chapter 3&4.

The “no surprises” rule simply give assurances to those nonfederal parties who enter into Habitat Conservation Plans that they can rely upon the terms and conditions specified in the plans because they will not be changed by the regulatory agencies unless a “jeopardy” situation would require such a change. The existence of such a policy, in itself, does not provide any information upon which another SEIS to the Northwest Forest Plan would be required. There is no information that any of the Habitat Conservation Plans adopted since the Northwest Forest Plan have significantly altered the assumptions underlying the analysis of effects on northern spotted owls as to the contributions of nonfederal lands to the conservation of that species. The hypothetical possibility that the “no surprises” policy could prevent a change in an Habitat Conservation Plan of such importance to the conservation of the owl that the effects analysis of the Northwest Forest Plan SEIS would no longer be valid is speculative. The only assumed contribution to spotted owls from nonfederal lands is that the Endangered Species Act prohibitions on “take” would allow existing populations on nonfederal lands to at least persist in the short term.

359. Comment: The Draft SEIS did not provide an adequate analysis of the effects of harvesting 12,000 acres of suitable spotted owl habitat.

Response: The Northwest Forest Plan Final SEIS fully analyzed the effects of timber harvest and other activities on spotted owl habitat. This Final SEIS includes a revised analysis of the potential harvest of acres due to removing some species from the Survey and Manage mitigation measures. This analysis and documentation includes a revision of the number of acres that would be returned to the underlying land allocation and potentially available for harvest. These acres consist primarily of small isolated patches that were unpredictable in extent, acreage, and location at the time of the Northwest Forest Plan Final SEIS. For these reasons, no specific benefit to the northern spotted owl was attributed to acres associated with Survey and Manage known sites. Additional analysis is not needed.

360. Comment: The Agencies should correct misinformation regarding threatened and endangered insect species. Several species included in the Draft SEIS are not forest associated or they occur outside the Northwest Forest Plan area.

Response: Several arthropod species have been included on the list of threatened and endangered species that received some analysis in the Draft SEIS. These species were conservatively included in the Draft SEIS to ensure that each would receive consideration under the alternatives being considered. This clarification has been incorporated into the Final SEIS. This clarification does not alter the previous determination that the proposed action would have no effect on these species.

361. Comment: The Agencies should reconcile apparent discrepancies in the rate of spotted owl decline between Appendix J3 of the Northwest Forest Plan and the Draft SEIS.

Response: The rate of spotted owl decline that was reported in the 1994 Northwest Forest Plan Final SEIS (p. 3&4-223) was 4.52 percent per year ($\lambda = 0.9548$, with a 95 percent confidence interval of 0.9162 - 0.9934). The analysis that provided those conclusions was published at Appendix J1, with additional analysis included in Appendix J3. The estimated rate of decline in the 1998 meta-analysis of spotted owl data was 3.9 percent, with a 95 percent confidence interval of 0.925 - 0.997 (Franklin et al. 1999). This means that the population could be declining by as much as 7.5 percent per year or by as little as 0.3 percent per year. Based on the fact that most demographic studies are not reporting large declines in owl numbers, it appears that the actual rate of decline is closer to 0.3 percent per year than it is to 7.5 percent per year.

(Forsman pers. comm.). Thus, there is no clear evidence from the data that there are substantial discrepancies between the actual and predicted rates of population change or that the more recent analysis shows discrepancies with the Northwest Forest Plan Final SEIS.

362. Comment: The Agencies should justify their description of habitat of the northern spotted owl.

Response: Although there may be some areas of late-successional forest that are unsuitable for spotted owls, there is currently no way to differentiate between the suitability of different late-successional stands. Therefore, the Agencies have used the conventional approach that has been used by previous groups that have tried to develop plans for the owl, which is to assume that late-successional forests at low to moderate elevations are potentially suitable for spotted owls (e.g., Thomas et al. 1990 and USDA et al. 1993). The large majority of existing late-successional forest is within suitable elevations for spotted owl use. The Agencies believe this is an unbiased way to deal with this issue because any attempt to label individual late-successional stands of old forest as good, bad, or mediocre habitat would rapidly bog down in a huge number of subjective decisions that would be impossible to support with data. Although this approach may not be perfect, it is simple, repeatable, and does not involve a lot of subjective decisions.

In addition, it is important to emphasize that the Agencies' definition of suitable habitat is fairly conservative in that some spotted owls occupy habitats that actually include relatively little late-successional forest. This is particularly true of areas on the east slope of the Cascades, much of the Oregon Coast Ranges, and private lands in northwestern California. Although these areas may not be counted as "suitable" habitat by our definition, they actually harbor a number of spotted owls that probably do contribute to the health of the population.

363. Comment: Old-growth harvest should not be allowed on the Olympic Peninsula due to continued spotted owl population declines.

Response: Under the Northwest Forest Plan, land allocations on Forest Service managed lands on the Olympic Peninsula are in Late-Successional Reserves and Adaptive Management Areas. Few acres of suitable owl habitat are available for harvest.

364. Comment: The Agencies have not clearly identified the contribution of small late-successional forest patches to spotted owl conservation.

Response: The analysis of spotted owl habitat and effects of the Northwest Forest Plan Final SEIS on that habitat considered the potential contribution of small patches of late-successional forest identified for Survey and Manage and Protection Buffer species. At that time, the acreage of late-successional forest that would be included in managed known sites and Protection Buffers was assumed to be very low. Their distribution across the landscape and location relative to reserves or listed species sites were unpredictable. For those reasons, that analysis concluded that these small areas of late-successional forest would not provide significant benefits to listed species. Although 72 species would be removed from Survey and Manage over all or part of their ranges under the action alternatives, the patches of late-successional forest that would be returned to underlying land allocations and potentially available for timber harvest would not substantively lower the amount, or change the distribution, of habitat available to spotted owls assumed in the analysis of effects in the Northwest Forest Plan Final SEIS.

365. Comment: The Agencies should adopt an alternative that provides protection for rare plant species, including "listed" species and those species recognized by Rare Plant Programs.

Response: Agencies must consult under section 7 of the Endangered Species Act to ensure that their activities do not jeopardize the continued existence of listed species. Changes to management direction for rare plant species listed as threatened or endangered by state governments or are listed as special concern (other than those associated with late-successional forests) by other organizations are beyond the scope of this SEIS. The purpose of this SEIS is to

manage for certain species, including plant species, that are: (1) considered rare or uncommon within the Northwest Forest Plan area; (2) associated with late-successional forests; and, (3) not considered to otherwise have a reasonable assurance of persistence under other Northwest Forest Plan land allocations and standards and guidelines. Management of rare plant species that do not meet these criteria have already been adequately considered in local agency land and resource management plans.

366. Comment: For fiscal years 1997-1999, the Agencies applied to the U.S. Fish and Wildlife Service for take permits which would allow for the removal of 144,684 acres of suitable owl habitat. All of these applications were approved. These take permits allow removal of more suitable owl habitat than allowed under the Northwest Forest Plan. This is significant new information that needs to be disclosed.

Response: Most of the habitat modification projects conducted by the Forest Service and BLM in Oregon since 1997 have undergone programmatic section 7 Endangered Species Act consultation. All covered projects are consistent with the Northwest Forest Plan Standards and Guidelines and the land and resource management plan of the respective administrative units. Projects covered under these consultations vary in nature from regeneration harvest and thinnings to salvage and individual tree removal. These activities occur in various habitats that may result in removal, downgrading, or degrading of suitable or dispersal spotted owl habitat. Downgrade means to change the functionality of spotted owl habitat from suitable to dispersal. Degrade means to affect the quality of, but not remove the functionality of, either suitable or dispersal spotted owl habitat. Some activities occur in habitats not currently classified as either suitable or dispersal habitat. The U.S. Fish and Wildlife Service has written incidental take statements for the activities under these consultations, authorizing incidental take for habitat loss as well as for activities that disturb spotted owls, but do not result in actual habitat loss. The majority of the acres consulted on, and for which incidental take is authorized, do not result in the actual removal of suitable owl habitat. The acreage of owl habitat that was affected by timber harvest activity in these years does not exceed what was expected at the time of the Northwest Forest Plan Final SEIS and accompanying Biological Assessment.

Costs of Management

367. Comment: The Agencies should include a mechanism for adjusting survey schedules and Probable Sale Quantity (PSQ) when allocated funds are insufficient to meet timelines. How will the Agencies ensure that adequate funding is available to comply with the Survey and Manage Standards and Guidelines?

Response: The Final SEIS contains clarified assumptions about funding and includes a section on the potential for reduced funding. Pre-disturbance survey costs are considered part of project planning. Language has been added to the Background section in Chapter 3&4 clarifying that if pre-disturbance surveys are not completed then the project would not go forward. As with all other planning tasks, if funding were not available the PSQ would not be met. Additional funds were requested and received for conducting strategic surveys during fiscal year 2000. Additional funds will be requested in future years through the normal budget process.

368. Comment: The Draft SEIS should address monitoring costs.

Response: Monitoring of the Northwest Forest Plan is conducted each year at different scales. This includes monitoring of the Survey and Manage Standards and Guidelines, as appropriate. Implementation monitoring is accomplished by an interagency monitoring team that reviews projects on an annual basis. Additionally, implementation of the Survey and Manage Standards and Guidelines can be considered a form of effectiveness monitoring, particularly strategic surveys. As discussed in the Costs of Management section in Chapter 3&4, monitoring costs associated specifically with the Survey and Manage mitigation cost are not tracked.

369. Comment: Why do survey-related costs vary by assumed hourly rate of pay?

Response: Varying survey costs by hourly rate of pay was done to provide a range of estimates. To reduce confusion, an average has been used in the Final SEIS to express the estimated employment and the associated cost related to pre-disturbance surveys.

370. Comment: The cost of pre-disturbance surveys should be included in the cost of timber sales.

Response: The costs of pre-disturbance surveys for timber sales are included as a cost of timber sale planning.

371. Comment: The Final SEIS should quantify additional project costs imposed by pre-disturbance surveys.

Response: The Final SEIS contains a clarified discussion of costs associated with pre-disturbance surveys. Information is now also presented on a survey cost per acre basis.

372. Comment: Taxa and Survey and Manage teams should be funded for at least 5 years.

Response: The RIEC has added positions to assist in the management and implementation of the Survey and Manage Standards and Guidelines. The Costs of Management section includes the cost estimates for this work. The increased awareness of species management objectives and the benefits of strategic surveys as a result of the analysis undertaken for this SEIS have already resulted in increased emphasis and funding for Survey and Manage. The Agencies recognize the needs identified in the action alternatives to fund specialists for years to come.

373. Comment: The Agencies should address the need for securing adequate funding for Survey and Manage activities, the likelihood of this funding, and the consequences if this funding is not forthcoming.

Response: Funding of the Survey and Manage Standards and Guidelines is, and will continue to be, requested through the Agencies' normal budgeting process. The cost of pre-disturbance surveys is included in project costs. Additional funds were requested and received to conduct strategic surveys during fiscal year 2000. A discussion has been added near the front of Chapter 3&4 explaining the implications of reduced funding.

374. Comment: The cost of the Survey and Manage Standards and Guidelines is beyond what Congress is likely to fund which will jeopardize the implementation and cause further delays and lawsuits.

Response: Additional funds were requested and received for implementation of surveys during fiscal year 2000. Additional funds will be requested in future years through the normal budgeting process. The Final SEIS contains clarified assumptions about funding. For analysis purposes, it is assumed that adequate funds will be available.

375. Comment: The Agencies should not decrease funding when there is so much work to do.

Response: The projected costs for the Survey and Manage Standards and Guidelines are greater than has been spent in the past. The least expensive alternative will result in spending approximately double what was spent in 1999. An objective of this SEIS is to clarify needs and objectives of the Survey and Manage mitigation measure. Fiscal year 2000 funding was increased as a result of these analyses.

376. Comment: The Agencies should provide information requested on current and past funding for Survey and Manage activities.

Response: The cost associated with implementing the Survey and Manage Standards and Guidelines is presented in Table 3&4-6 and in other places in the Costs of Management section of Chapter 3&4.

377. Comment: The Agencies should revise misleading figures that inflate the Survey and Manage cost. The SEIS does not disclose or account for the Agencies practice of surveying for more than one species at the same time.

Response: The Final SEIS contains clarifications of the assumptions used to develop costs. The cost figures in the Final SEIS do account for the practice of surveying for multiple species at the same time. The costs for surveying for multiple species within a taxa do not vary much whether you are surveying for one species or eight.

378. Comment: The cost of surveying fungi for 5 years unfairly makes the No-Action Alternative the most expensive. An alternative that reduces fungi cost should have been considered.

Response: The No-Action Alternative contains the provisions from the Northwest Forest Plan that pre-disturbance surveys for Protection Buffer species must have a “high probability of detecting occupied sites.” There are seven fungi that fruit irregularly and could require 5 years of surveys to meet this criterion. Alternatives 1 and 2 eliminate the need to conduct pre-disturbance surveys for these fungi. Alternative 3 surveys for these species using an abbreviated “equivalent-effort” survey. An alternative such as the one proposed would be similar to Alternative 1 since Alternative 1 clarifies direction and assigns species to more appropriate categories.

379. Comment: The budgets of the Pacific Northwest Research Station and Pacific Southwest Forest and Range Experiment Station should be dedicated to studying species.

Response: A substantial portion of the budget and personnel of these offices is dedicated to Northwest Forest Plan issues and their staff includes several taxa specialists involved primarily with Survey and Manage species. Their involvement is noted in the Strategic Survey discussion in Chapter 2.

380. Comment: The Agencies should correct Figure 3&4-4c that illustrate pre-disturbance survey cost per 1,000 board feet of timber.

Response: Figure 3&4-4c in the Draft SEIS contained errors and has not been reproduced in this Final SEIS. The concept of using an average volume per acre to calculate the pre-disturbance survey cost per thousand board feet did not accurately capture the concern for the economic viability of low volume timber sales such as forest health treatments and thinning. The Final SEIS contains a clarified discussion based on pre-disturbance survey costs per acre.

381. Comment: Alternative 3 should state how many surveys will be “equivalent-effort” and break this down by taxa group.

Response: The species requiring equivalent-effort surveys in Alternative 3 can be determined by examining Table 2-2. Equivalent-effort surveys in Alternative 3 apply to species that in Alternative 1, fall into Categories 1B, 1D, or 1E (except for three species footnoted as not needing pre-disturbance surveys). The totals by taxa group are fungi, 202; lichens, 30; bryophytes, 13; vertebrates, 0; mollusks, 10; vascular plants, 0; and arthropods, 0.

382. Comment: Pre-disturbance surveys should continue regardless of cost. Strategic surveys will not provide the answers because they target the most likely habitat.

Response: For some species, pre-disturbance surveys are not practical. For these, the most efficient means to gather habitat information is to conduct strategic surveys. The data collected from strategic surveys provides the basis for habitat modeling and statistically valid scientific

analysis. All of the alternatives use the concept of pre-disturbance surveys to find sites and to reduce the inadvertent loss of sites before implementing habitat-disturbing projects. The primary discussion of costs for the No-Action Alternative is for seven fungi that would require 5-year pre-disturbance surveys. There are 224 species of fungi considered in the Survey and Manage Standards and Guidelines. Of these, the No-Action Alternative identifies eight for pre-disturbance surveys. Alternatives 1 and 2 identify one of those eight where pre-disturbance surveys are practical and provide strategic surveys for the other seven. Alternative 3 would conduct equivalent-effort surveys for all fungi that remain in Survey and Manage.

Pre-disturbance surveys only occur where there is a project proposal. While important information is collected through the pre-disturbance surveys, scientifically designed strategic surveys can provide more information about species stability and distribution. The discussion of strategic surveys has been expanded in this Final SEIS (see Chapter 2).

383. Comment: The expense of Survey and Manage should not justify compromising species preservation.

Response: The Survey and Manage Standards and Guidelines are a mitigation measure designed to increase confidence the Northwest Forest Plan will meet species persistence objectives. They are not the only management for most of these species. It is the goal of all alternatives to help improve the distribution and stability of certain species across federally managed lands and/or to decrease the likelihood of extirpation of these species from federally managed lands in the Northwest Forest Plan area. However, actions for any purpose have cost limits and it would not be responsible stewardship to spend an inappropriate or exorbitant amount of resources to ensure 100 percent certainty.

384. Comment: To avoid National Forest Management Act (NFMA) and NEPA violations, the Agencies should not use lack of funding as an excuse to discontinue surveys.

Response: The Agencies have not used lack of funding as an excuse to discontinue surveys. As stated in Chapter 3&4, projects requiring pre-disturbance surveys will not go forward until the surveys are completed. The cost for completing these surveys is included in the costs for project planning.

Socioeconomic Effects

385. Comment: The Agencies should analyze and discuss how the alternatives will affect the current operations including timber harvest, prescribed burning, and treatment of insect infestations.

Response: Most timber harvest and prescribed burning activities are considered habitat disturbing by the Agencies. Evaluations of specific proposals to treat insect infestations will determine whether the action is potentially habitat disturbing. The text of the Final SEIS has been changed to clarify that all habitat-disturbing activities, including those not specifically named, are subject to Survey and Manage requirements.

386. Comment: The Final SEIS should provide sufficient support for socioeconomic impact estimates.

Response: Discussions of socioeconomic effects is presented in the Northwest Forest Plan Final SEIS. The analysis in this SEIS uses the same socioeconomic assumptions to identify effects that differentiate from those presented in the Northwest Forest Plan Final SEIS. The effects displayed in this SEIS do not alter the conclusions contained in the Northwest Forest Plan Final SEIS and it is not necessary to repeat that information.

387. Comment: Recreational uses should have the same priority as extractive uses.

Response: Public lands managed by both Agencies are managed under a multiple-use concept, which includes recreation.

388. Comment: The Forest Service should pull the plug on proposed Pelican Butte ski area.

Response: The purpose and need for this SEIS is to amend the Survey and Manage and other mitigation measures. The proposed Pelican Butte ski area is outside the scope of this SEIS.

389. Comment: The Agencies should not risk extinction of unknown species that may possess special value.

Response: Undiscovered uses of species are specifically discussed in Chapter 3&4 under Species Values. It is the expressed goal of both Agencies to prevent listing of species under the Endangered Species Act and to preserve species diversity. Further, the basic approach of the Northwest Forest Plan is to manage ecosystem structure, functions, and processes, thereby providing the highest likelihood of successfully managing species which may, as yet, be undiscovered.

390. Comment: The Final SEIS should eliminate the bias that survey-related jobs are unimportant.

Response: The discussion of survey-related employment has been clarified in the Final SEIS.

391. Comment: The Final SEIS should include all forestry jobs, including survey jobs, in the evaluation of socioeconomic effects.

Response: The discussion of survey-related employment has been clarified in the Final SEIS to more closely parallel the discussion of timber-related employment.

392. Comment: The Final SEIS should include new economic information designed to help rural communities transition from an extraction based economy to a sustainable economy.

Response: Discussions of socioeconomic effects are presented in the Northwest Forest Plan Final SEIS. Actions related to economic transition or the Economic Adjustment Initiative are beyond the scope of this SEIS.

393. Comment: The Agencies should conduct a new economic analysis that includes economic changes since 1994.

Response: Discussions of socioeconomic effects are presented in the Northwest Forest Plan Final SEIS. This SEIS is tiered to that document and it is not necessary to repeat that information. The analysis in this SEIS uses the same socioeconomic assumptions to identify effects that differ from those presented in the Northwest Forest Plan Final SEIS. The assumptions and the analyses in the Northwest Forest Plan Final SEIS are still valid.

394. Comment: The thorough surveying and management of our forests would create far greater numbers of permanent jobs than timber harvest.

Response: The issue of job creation and maintenance is specifically discussed in the Socioeconomic Effects section in Chapter 3&4.

395. Comment: Reducing environmental requirements because of high survey costs is not an appropriate response by the Agencies.

Response: For non-vertebrates, the Northwest Forest Plan met a standard of providing for stable distribution, potentially with gaps, to the extent practicable (USDA, USDI 1994, p. 44.) Alternative 1 was designed to provide a level of species management at least as high as the level

intended in the Northwest Forest Plan. The Northwest Forest Plan ROD clearly did not intend pre-disturbance surveys for seven fungi species to require multiple surveys each year for 5 years. This SEIS lowers requirements where they are not practicable. It would not be responsible stewardship for an agency to spend an inappropriate or exorbitant amount of resources meeting an unnecessarily high standard.

396. Comment: The Agencies should revise incorrect statements that revenue sharing outcomes are different than anticipated.

Response: Discussion of effects in this Final SEIS compare outcomes to those presented in the Northwest Forest Plan Final SEIS. Legislation to provide for a revenue sharing “safety net” was passed on August 10, 1993. This was prior to issuance of the Northwest Forest Plan Final SEIS and ROD; however, this legislation was not incorporated into the analysis of impacts to federal revenue sharing displayed in the Northwest Forest Plan Final SEIS. This document was written to make readers aware of this oversight and briefly discuss the actual outcomes under that legislation. The discussion of federal revenue sharing in this Final SEIS has been modified in an effort to improve clarity. Finally, new legislation passed on September 13, 2000, provides annual payments based on the highest 3 years of payment between 1986 and 1999. Details of implementing this legislation have not yet been determined.

397. Comment: The Agencies should stabilize safety net payments.

Response: The proposal is outside the authority of the Agencies. The original “safety net” payment legislation was enacted by Congress in 1993. Any changes would require additional Congressional action, such as that passed by the Senate on September 13, 2000. See previous response.

398. Comment: Congress should decouple payments to county from timber sales.

Response: The comment is beyond the authority of the Agencies. Federal revenue sharing is made in accordance with existing laws. Any changes would require Congressional action, see above.

399. Comment: The Agencies should conduct the social and economic impact monitoring required by the Northwest Forest Plan ROD.

Response: The Agencies have not yet completed a socioeconomic monitoring plan as required by the Northwest Forest Plan ROD. Impacts of the alternatives in this SEIS are expected to be of the same type and scale as those identified in the Northwest Forest Plan Final SEIS. Additional impacts from this SEIS have been scaled using the same assumptions as in the Northwest Forest Plan Final SEIS. Future socioeconomic monitoring will address the changes in these assumptions.

400. Comment: The Agencies should clarify the assumptions that underlie the loss of 6,570 jobs.

Response: Clarifying language has been added to the Socioeconomic Effects section in Chapter 3&4.

401. Comment: The Agencies should create more jobs in recreation activities.

Response: Creating jobs in recreation activities is outside the scope of this SEIS. Recreation development is not included in the alternatives proposed in this SEIS. The analysis in this SEIS addresses job loss and creation related to the alternatives. Primarily, jobs related to timber harvest, timber processing, and survey activities would be affected by the alternatives examined.

402. Comment: A chart displaying hourly wages for wood products occupations should be added for comparison to the chart showing the hourly wages for survey-related occupations.

Response: Information has been added to the Socioeconomic section in Chapter 3&4. The average hourly wage for survey-related employment is estimated to be \$12.85. The average hourly wage for timber-related employment is \$13.03.

403. Comment: The Agencies should consider the loss of timber jobs as a function of automation, not from reductions in timber harvest acres.

Response: The Agencies conducted the analysis of timber jobs using the same multiplier used in the Northwest Forest Plan Final SEIS. That multiplier incorporated information on automation in the lumber and wood products industry.

404. Comment: The Agencies should not compare employment declines from two different periods.

Response: This portion of the document has been rewritten to clarify the comparison.

405. Comment: The Agencies should address the vulnerability of the Northwest economy.

Response: Discussions of economic effects and identification of “at risk” communities are presented in the Northwest Forest Plan Final SEIS. This SEIS is tiered to that document and that information need not be repeated. The analysis in this Final SEIS identifies only effects that differ from those presented in the Northwest Forest Plan Final SEIS.

406. Comment: The Agencies should adequately address issues of social and cultural disruption that are treated superficially in the Draft SEIS.

Response: The Northwest Forest Plan Final SEIS identifies four factors of social and cultural disruption. This (Survey and Manage) Final SEIS concludes that the alternatives would not influence these factors. As stated in the Northwest Forest Plan Final SEIS, the presence of “these factors can impose a significant emotional impact, and all can undermine individual and community efforts to successfully adapt to changes.”

407. Comment: The Agencies should clarify wood products employment variation by alternative.

Response: The analysis in this SEIS uses the same socioeconomic assumptions as in the Northwest Forest Plan Final SEIS to identify effects that differ from those presented in the Northwest Forest Plan Final SEIS. The employment discussions in Chapter 3&4 have been rewritten to add clarity.

Native American Issues

408. Comment: The Coquille Tribe must manage the Coquille Forest according to the Northwest Forest Plan Standards and Guidelines, including the Survey and Manage Standards and Guidelines. The No-Action Alternative places an unreasonable financial burden on the Tribe and provides an opportunity for further lawsuits.

Response: The Underlying Need for the Proposed Action identifies several difficulties with implementation of the No-Action Alternative. One of those difficulties is the unreasonably high costs of pre-disturbance surveys for species for which such surveys are not practical. The action alternatives are designed to address these implementation difficulties.

409. Comment: The Agencies should commit to continued protection of species that are of cultural importance. The Agencies should consult with or notify local tribes or include a local tribal member in the Species Review Process before discontinuing occupied site management.

Response: The protection of tribal treaty rights and trust resources is addressed starting on page 54 of the Northwest Forest Plan ROD. The purpose of the Species Review Process is to ensure species managed under the Survey and Manage Standards and Guidelines are assigned to the correct categories to best meet persistence objectives and to recommend species removal from Survey and Manage when there is no longer a concern for persistence. Since species will remain on Survey and Manage as long as there is a concern for persistence, it is unlikely removal would threaten tribal uses. In either event, the opportunity to review the determination that species no longer meet the three basic Survey and Manage criteria is provided to tribes in a variety of ways, including coordination with the Bureau of Indian Affairs representative on RIEC, the tribal representative on the Interagency Advisory Committee and through review of the annual report. The SEIS team is not aware of any specific Survey and Manage species that is a particular concern of, or used by, tribes.

410. Comment: The Agencies should recognize tribal needs for species persistence on a local level.

Response: In general, application of the Survey and Manage Standards and Guidelines are not designed or envisioned to permit local extirpations. When species are removed from Survey and Manage, it is because they are deemed adequately represented in reserves or otherwise numerous enough to persist without the Survey and Manage provisions. Known uses of the species are considered as part of the context in which the removal decision is made. If a special tribal need exists, local management agreements or other provisions should be developed as appropriate between the tribe and the local administrative unit.

411. Comment: Tribes were not involved or consulted during the development of the Draft SEIS.

Response: The protection of Tribal Treaty Rights and Trust Resources is addressed in the Northwest Forest Plan ROD. On page 59 it states “Future analysis and planning efforts to implement this decision on lands administered by the BLM and Forest Service will identify Indian trust resources that would be affected and identify potential conflicts between proposed federal actions and treaty rights or tribal trust resources. Consultation with the recognized tribal government with jurisdiction over the trust property that the proposal may effect ... will be conducted early in the planning process.” The SEIS team is not aware of any Survey and Manage species that is a particular concern of or used by the tribes. The Draft SEIS was sent to 58 American Indian Tribes and Nations. Three tribes or nations sent responses. The Intergovernmental Advisory Committee, which includes tribal representatives, has provided comments on the SEIS and has been asked to provide advice to the RIEC regarding what alternative should be selected.

412. Comment: Agencies implementing the Northwest Forest Plan should include the Bureau of Indian Affairs because the Coquille Tribe must manage the Coquille Forest consistent with the Northwest Forest Plan.

Response: The requirement of the Coquille Tribe to manage the Coquille Forest consistent with the Northwest Forest Plan has been added to the Conflicts With Other Plans section in Chapter 3&4. The Bureau of Indian Affairs already has a representative on the RIEC.

Timber Harvest

413. Comment: The amount of late-successional forest available for harvest is hard to find in the Draft SEIS and should be emphasized in the Summary and in graphics.

Response: The discussion of acres in the Timber Harvest section in Chapter 3&4 has been updated. Figure 1-2 has been clarified.

414. Comment: The Final SEIS should include specific quantification of old growth by type and management allocation.

Response: This topic was not addressed in this SEIS because the balance between reserves and harvestable mature and old-growth forests was displayed in the 1994 Northwest Forest Plan SEIS. Further consideration of reserving old growth is outside the scope of this SEIS. Since both the mature and old-growth elements of late-successional forests provide habitat elements to most Survey and Manage species, both are treated similarly under the Survey and Manage Standards and Guidelines. There is one exception; no activities can go forward in “old growth” for Category 1B and 2B species if strategic surveys are not completed within 10 years for fungi and 5 years for all other species or equivalent-effort surveys are not conducted. This provision gives preference to old growth for rare species for which pre-disturbance surveys are not practical.

The 1994 Northwest Forest Plan Final SEIS approximated what portion of the late-successional forests were “old growth” as “stands dominated by conifer trees that are greater than 32 inches dbh, and are characterized by two or more canopy layers. These stands would generally best fit the definition of old-growth forests.” Of the 8,550,500 acres of late-successional forest, 5,381,500 acres, or 63 percent, fits this definition of old growth (USDA, USDI 1994a, pp. 3&4-26 and 27). Since the designers of the Northwest Forest Plan reserve system placed a priority on reserving the old growth, the portion of the late-successional forest in Matrix that is old growth is 41 percent (Johnson et al. 1993).

415. Comment: The discovery of Survey and Manage species in a timber contract area should not require the timber contract to be modified.

Response: The standards and guidelines specify that pre-disturbance surveys be completed before the date of the NEPA decision or decision document for the activity, so that final layout and contract offer can proceed without surprises and at reasonable expense. In practice, the Agencies have also been managing sites discovered during layout and contract preparation. There is no requirement in the standards and guidelines to modify a timber sale contract for sites found after the decision is signed. Survey and Manage species are not “listed” species, the potential loss of any given site is not likely to be disastrous for the species, and the implications of this element of the standards and guidelines was considered in the effects to species described in Chapter 3&4. The Survey and Manage mitigation measure adds confidence that the Northwest Forest Plan will meet persistence objectives for late-successional forest associated species, without requiring unreasonably disruptive or expensive measures be taken to manage every site regardless of when it is detected.

416. Comment: The permissibility of helicopter salvage operations should be evaluated on the basis of site-specific risks to Survey and Manage species.

Response: Case-by-case consideration of the effects of harvest and logging systems will be made around Survey and Manage species sites. Project-level analysis will determine if helicopter logging will maintain the habitat parameters specified in the species’ Management Recommendations.

417. Comment: Timber harvests should be confined to younger stands to reduce Survey and Manage costs.

Response: This approach is discussed in the Alternatives Considered But Eliminated From Detailed Study section in Chapter 2. Younger stands are currently being thinned to maintain health, vigor, and produce wood products, but nearly 90 percent of the PSQ is dependent upon older stands. The PSQ has considerable value to local economies and for helping meet public demands for wood products. It is also part of the balance the Northwest Forest Plan was designed to achieve. The Northwest Forest Plan ROD indicates that a reasonable assurance of species persistence will be achieved with the Survey and Manage mitigation measure and the fact that 86 percent of the late-successional forests are reserved by other elements of the Northwest Forest

Plan Standards and Guidelines. There is no indicated need to depart from the Northwest Forest Plan ROD and further reduce harvests from older stands in the Matrix and Adaptive Management Areas.

Further, since many second-growth stands contain remnant large logs, snags, or other habitat components from previous stands, some protocols require pre-disturbance surveys (and thus management of discovered sites) in some second-growth stands.

418. Comment: The Agencies should follow public opinion and end resource extraction on public lands.

Response: It is outside the scope of this SEIS to consider ending timber harvest on public lands. The mix of management and outputs from federally managed lands is governed by law, regulation, policy, and administrative and congressional direction. The charge by President Clinton when he initiated preparation of the Northwest Forest Plan on April 2, 1993, was to provide for a balance including "...the plan should produce a predictable and sustainable level of timber sales and nontimber resources that will not degrade or destroy the environment." That balance serves as the purpose and need for the Northwest Forest Plan. This SEIS amends the Survey and Manage Standards and Guidelines which are one small part of the Northwest Forest Plan.

419. Comment: The proposed amendment reveals a significant reduction in the 1.1 billion board feet PSQ displayed in the 1994 Northwest Forest Plan Final SEIS, and should be revised through the Forest Plan revision process (36 CFR 219.10(e)). The statement in Chapter 2 that "the changes proposed...would help achieve (and not alter) the relationship between levels of multiple-use goods and services originally projected" is incorrect.

Response: The PSQ shown in the 1994 Northwest Forest Plan Final SEIS was 958 million board feet (MMBF) per year. The 1.1 billion figure includes 10 percent "other wood." Other wood has not been added to PSQ figures in this Final SEIS. The PSQ originally declared in the Northwest Forest Plan has already been reduced to 811 MMBF. This reduction was a result of completion of land and resource management plans in late 1994 and 1995 for BLM units in Oregon and four National Forests in California, and minor corrections in analysis for six National Forests in Oregon in 1998. Those planning processes followed all applicable planning regulations for both Agencies and resulted in a PSQ reduction of 147 MMBF.

The 1994 Northwest Forest Plan ROD stated that the "...PSQ levels shown are estimates. They represent neither minimum levels that must be met nor maximum levels that cannot be exceeded. They are rough approximations because of the difficulty associated with predicting actual timber sale levels over the next decade, given...the complex nature of many of the standards and guidelines. They represent our best assessment of the average amount of timber likely to be awarded annually in the planning area over the next decade..." Since 1994, the Agencies have gained experience implementing the Survey and Manage Standards and Guidelines, and the PSQ for each alternatives in this SEIS reflects that experience. The levels are not necessarily outside of the uncertainty acknowledged by the decision-makers in 1994. Two of the action alternatives have an estimated PSQ within 10 percent of the currently declared level of 811 MMBF.

The alternatives in this SEIS do not represent a "significant change in the plan" as defined in 36 CFR 219.10(f). The discussion of this topic in Chapter 2 of the Final SEIS, under Relationship of Alternatives to Existing Management Plans of the Agencies, has been expanded to clarify these points.

420. Comment: Increasing the allowable cut by 15 million board feet per year is a danger to wildlife.

Response: For the No-Action Alternative, experience now shows the PSQ would be reduced substantially in the No-Action Alternative from levels predicted in the 1994 Northwest Forest Plan Final SEIS. The preferred alternative would increase PSQ compared to the No-Action Alternative

because the preferred alternative better meets the original intent by eliminating duplication and eliminating occupied site management for species no longer needing the Survey and Manage mitigation measure. The PSQ of the preferred alternative is still below the PSQ predicted in the 1994 Northwest Forest Plan ROD and effects to wildlife are still within the range of effects expected in the Northwest Forest Plan Final SEIS.

421. Comment: Potential timber harvest reductions resulting from a shortage of qualified surveyors should be analyzed and stated in the SEIS.

Response: The following items will help ensure that personnel resources are available to complete pre-disturbance surveys: (1) ongoing training; (2) recent completion of Survey Protocols for all “practical” Category 2 species; (3) removing 63 species for which Survey and Manage is unneeded; (4) clarifying Survey and Manage Standards and Guidelines; and, (5) removing pre-disturbance survey requirements for species when such surveys are not practical. A discussion has been added to Chapter 3&4 explaining that activities (such as timber harvest) will decline if pre-disturbance surveys are not funded.

422. Comment: The Agencies should manage early-successional rather than late-successional stands for timber harvest because they can sequester carbon faster and be more flexibly managed.

Response: The PSQ already includes intensive management of the second-growth stands in the Matrix, consistent with underlying land and resource management plan standards and guidelines. Management of these younger stands provides 10 to 15 percent of the PSQ in the early decades with the contribution from these stands increasing over time. Harvest of older stands in the next few decades maintains the PSQ until younger stands mature. A related alternative of managing younger stands within Late-Successional Reserves is discussed in Chapter 2, Alternatives Considered But Eliminated From Detailed Study. The effects on global climate and carbon cycling discussed in the 1994 Northwest Forest Plan Final SEIS (p. 3&4-50) are not changed by this SEIS.

423. Comment: The Agencies should calculate the number of acres of old growth that can be logged while incurring no net loss.

Response: A pie chart in the Draft SEIS incorrectly gave the impression that harvest would reduce the total amount of late-successional forest. This chart has been reformatted to show other stands in all land allocations are growing into mature and old-growth conditions (ingrowth). The rate of ingrowth into late-successional forest is discussed in the 1994 Northwest Forest Plan Final SEIS and elements of that discussion have been added to this SEIS in the Forest Ecosystem section in Chapter 3&4. Under the harvest schedules in the Northwest Forest Plan, late-successional forest and total biomass in the Northwest Forest Plan area is increasing at 2 to 3 times the rate of human disturbance primarily because of ingrowth in the reserves.

424. Comment: The SEIS should state how the 15 percent rule and the 15 percent LOS retention (Matrix) by watershed will affect PSQ.

Response: These two standards and guidelines are in the 1994 Northwest Forest Plan Final SEIS and are reflected in the PSQ discussed in the Northwest Forest Plan ROD. They are not proposed for amendment by any of the alternatives in this SEIS. Further discussion of the effects of those standards and guidelines is outside the scope of this SEIS.

425. Comment: The Final SEIS should state clearly that Survey and Manage buffers are not to be counted toward the 15 percent retention.

Response: There is no reason that managed known sites should not also count toward green tree retention requirements if they meet the parameters specified in those standards and guidelines.

426. Comment: The Agencies should correct discrepancies between various sections of Chapter 3&4 regarding additional acres of late-successional forest available for timber harvest as a result of the various alternatives.

Response: These discrepancies have been corrected in this Final SEIS.

427. Comment: The SEIS should state whether the PSQ estimate for the No-Action Alternative includes restrictions for Protection Buffer species.

Response: The Timber Harvest section in Chapter 3&4 has been clarified to show that the PSQ calculations for the No-Action Alternative include the Protection Buffer species.

428. Comment: The SEIS should state whether there will be effects on PSQ from 303(d) regulations.

Response: Clean Water Act regulations were considered in the 1994 Northwest Forest Plan Final SEIS, particularly in the Aquatic Conservation Strategy and in the underlying land and resource management plans. This SEIS does not make decisions to harvest timber. Discussion of the effects of 303(d) regulations on PSQ is outside the scope of this SEIS.

429. Comment: The SEIS incorrectly states PSQ coming from early-successional forests is unaffected by Survey and Manage species. Known sites are also restricting harvests in younger stands.

Response: It is true that known sites prevent harvest of areas within younger stands and pre-disturbance surveys for some species are required in younger stands. The known sites considered in the PSQ analysis are from the ISMS database. This database does not show seral stage or stand age for sites found during pre-disturbance surveys and, for modeling purposes only, all sites were assumed to be in late-successional forests. While this assumption will result in an overstatement of the reductions in PSQ caused by known sites, it is probably not significant in the context of this analysis. Species are removed from the Survey and Manage Standards and Guidelines when it is determined they are not closely associated with late-successional forests. Further, the standards and guidelines permit Survey Protocols to identify seral stages where sites, even if present, are not needed to meet persistence objectives.

430. Comment: The PSQ discussion should be replaced with a discussion of actual volumes sold in the past 3 years and projected for the first decade.

Response: The PSQ is a per decade number and is an estimate of the volume that could be produced forever given the existing set of standards and guidelines and activity assumptions. The Agencies essentially met the PSQ numbers in the Northwest Forest Plan, following a ROD-identified start-up period, until fiscal year 1999. Upon completion of the Survey and Manage SEIS and resolution of other Northwest Forest Plan issues, the Agencies expect to offer the sale volume indicated by the PSQ projections in individual unit land and resource management plans. The PSQ estimates in this SEIS are provided to help compare alternatives; they are not specific enough to redeclare PSQ for any administrative unit. A listing of the actual volume offered in the last 5 years has been added to the Timber Harvest section in Chapter 3&4; however, these volumes are not used to project PSQ.

431. Comment: The PSQ discussion needs to include “other wood.” Since biomass thinning of young stands should not be affected by the Survey and Manage Standards and Guidelines, the percentage of such wood available should increase and be recognized for funding purposes.

Response: The 10 percent “other wood” is not included in volume comparisons in this SEIS because the method of calculating changes to PSQ would not work well for “other wood.” In some cases, other wood comes from young stands and may not vary much between alternatives. However, other wood also comes from cull material in old growth and other sales affected by the

Survey and Manage Standards and Guidelines. Other wood would vary between alternatives similar to differences in PSQ. There is no assumption that the absolute volume of other wood would vary one way or the other as a result of these alternatives.

432. Comment: Timber harvest should not be halted because surveys are not completed.

Response: The Agencies anticipate completing all required surveys and continuing to offer the estimated PSQ levels. However, the anticipated effects to species described in Chapter 3&4 of this SEIS are predicated on pre-disturbance surveys and certain strategic surveys being completed according to the standards and guidelines. A discussion has been added to Chapter 3&4 explaining that if required surveys are not conducted, the affected habitat-disturbing activities will not be implemented.

433. Comment: The Draft SEIS claims an accomplishment of 1.6 billion board feet of timber offered for sale over the 2-year period of fiscal years 1997 and 1998. How is this justified when the Northwest Forest Plan projected 1.1 billion board feet per year?

Response: As described in the Timber Harvest section of Chapter 3&4, completion of final land and resource management plans for BLM and California National Forests in 1994 and 1995, along with administrative corrections to PSQ calculations for six National Forests in Region 6 in 1998, resulted in a currently declared PSQ of 811 million board feet annually. The 1.6 billion board feet accomplishment for the 2 years mentioned is very close to this number.

434. Comment: The Agencies should not increase acres available for harvest.

Response: Potential effects of the Survey and Manage mitigation measure were not calculable for the 1994 Northwest Forest Plan Final SEIS, but were described as “adding uncertainty” to the projected level of timber harvest. Analysis for this SEIS indicates the No-Action Alternative would result in a substantial portion of the Matrix being managed as known sites for Survey and Manage species and result in PSQ falling substantially below levels predicted in the Northwest Forest Plan Final SEIS. Because the proposed action reduces duplication and clarifies processes, it removes the management of sites unnecessary for achieving the original Northwest Forest Plan species objectives. One result of this is a PSQ within 10 percent of 1994-predicted levels. None of the alternatives increase harvestable acres when compared with estimates in the Northwest Forest Plan Final SEIS, nor do they add any acres to the Matrix (other than minor acres resulting from the elimination of land allocations associated with certain Protection Buffer species, which mostly continue to be managed as known sites).

435. Comment: The Agencies should not open 658,000 to 955,000 acres of late-successional forests to harvest until they have analyzed the effects on these species.

Response: The assumption that these acres were somehow “closed” until the Survey and Manage SEIS was completed is incorrect. The Northwest Forest Plan left Matrix acres subject to regularly scheduled timber harvest (as specified in underlying land and resource management plans) while designating 86 percent of the late-successional forests into some type of reserve. The Survey and Manage mitigation measure added additional management for certain species to be applied as activities are planned or, in the case of most strategic surveys, within a defined time period. The effects to species was examined in the Northwest Forest Plan Final SEIS, Appendix J2, and again in this SEIS. There is no identified reason for further restricting harvest or doing additional analysis not already described in the Northwest Forest Plan Standards and Guidelines or already being conducted on a project basis. The acreage projections in the Timber Harvest section in Chapter 3&4 do not “open” acres; they reflect projections of acres potentially affected by known sites of these species as the standards and guidelines of the alternatives are applied.

436. Comment: The SEIS should discuss the impact of releasing 12,000 acres of late-successional forest to timber harvest.

Response: The acres of currently known sites for the 63 species (and 9 others in part of their ranges) proposed for removal under the action alternatives that will become available for timber harvest were considered available for timber harvest in the 1994 Northwest Forest Plan Final SEIS. The effect of timber harvest on the individual species currently occupying these sites is considered in the individual species discussions in Chapter 3&4 of this SEIS. References in Chapter 3&4 of the Draft SEIS to “loss of protection” for 12,000 acres were in this context and have been clarified.

437. Comment: The Agencies should supply more timber to the forest products businesses. The current contribution of less than 10 percent of the regional timber supply coming from federal forests is a result of decreased supply, not decreased demand.

Response: One of the issues of this SEIS is whether the alternatives can meet species objectives “without unnecessarily impairing the ability of the Agencies to meet other resource needs and objectives.” An objective of this SEIS is to clarify standards and guidelines and reduce duplication and site management that unnecessarily limits other resource management activities. If this objective can be met with the selected alternative, timber production will meet the balance intended in the 1994 Northwest Forest Plan.

438. Comment: The Agencies should calculate ASQ (Allowable Sale Quantity) for each forest within the Northwest Forest Plan area in compliance with the National Forest Management Act.

Response: The alternatives in this SEIS would replace similar standards and guidelines already in land and resource management plans and would not redeclare probable sale quantity (PSQ) at any scale. The scope of this action would not result in a significant change in these plans. Since this is not a significant change, there is no requirement to quantify PSQ for individual administrative units at this time. Details are described in Chapter 2, Relationship of Alternatives to Existing Management Plans of the Agencies. The PSQ levels shown in this SEIS for each alternative were determined primarily by projections made at the regional scale and were based predominantly on 2 years of pre-disturbance surveys efforts. While accurate enough to provide for a reasoned comparison and choice from among the alternatives, they should not be used at any other scale.

439. Comment: The Agencies should realize the 15 percent PSQ reduction and the Survey and Manage mitigation measure are having significant negative impacts on the timber industry that have not been adequately considered.

Response: The Northwest Forest Plan Final SEIS and ROD indicated PSQ would be recalculated when BLM and Forest Service Region 5 Land and Resource Management Plans were completed in 1994 and 1995. Analysis for each of these plans was documented in Environmental Impact Statements and the resultant plans reduced PSQ almost all of the 15 percent shown in this SEIS.

The Survey and Manage mitigation measure was described as “adding uncertainty” to the PSQ amounts displayed in the Northwest Forest Plan Final SEIS. Although effects to PSQ have been higher than anticipated, the alternatives in this SEIS are driven in part by a need to reduce PSQ impacts unneeded to meet species objectives. The three action alternatives would accomplish that objective to some extent.

440. Comment: Projecting known sites for most species for 25 years in the PSQ section ignores that the annual application of the adaptive management process will remove many species from Survey and Manage before then.

Response: At the time of the Draft SEIS, few species had been proposed for removal from Survey and Manage because, based on number of known sites, there was little basis for projecting when species might be removed. Projected sites for 14 of the most common species were either capped or removed based on an estimate of when, if current detection rates continued, a species might be removed from Survey and Manage or when “manage high-priority sites” direction might limit the need for additional sites. Prior to PSQ calculations for the Final SEIS, however, experience from

another iteration of the Step 3 panel provided additional information about the range of numbers of sites that typifies species proposed for removal. This information has been applied to all species projections and a more realistic effect is now displayed in the PSQ discussion in Chapter 3&4.

441. Comment: The Agencies should draft an alternative that maintains the PSQ of the Northwest Forest Plan.

Response: The Northwest Forest Plan ROD anticipated potential changes in PSQ. In addition to the uncertainty of Survey and Manage effects (USDA, USDI 1994a, p. 3&4-267), and the understanding in the ROD that PSQ was a “rough approximation” (USDA, USDI 1994b, p. 19), the ROD indicated the PSQ “...for National Forests and BLM Districts without approved management plans will be recalculated when the respective plans are adopted.” The current declared PSQ is 811 million board feet (MMBF) annually, down from the 958 shown in the 1994 Northwest Forest Plan Final SEIS (p. 3&4-268). Two of the action alternatives would meet over 90 percent of this level. To describe an alternative that would meet the 958 MMBF level of the Northwest Forest Plan would require a re-mix of land allocations or other reconsideration of the Northwest Forest Plan outside the scope of this SEIS. To describe an alternative that meets 811 MMBF would also require a re-mix of land allocations or standards and guidelines, since the 811 reflects only a 6 MMBF reduction for Survey and Manage species sites known as of 1994.

442. Comment: The Agencies should not remove the Late-Successional Reserve and Managed Late-Successional Area designations from Protection Buffer species because it will result in pressure to get PSQ from these acres.

Response: The Record of Decision for this SEIS will not redeclare PSQ. Although Late-Successional Reserve and Managed Late-Successional Area designations are removed from Protection Buffer sites, there is no assumed increase in PSQ because actual site management is expected to continue at the same site and under the same practices as in the past. When PSQs are recalculated for individual administrative units during future plan revisions, areas to be managed as known sites for Survey and Manage species will be appropriately considered. In summary, there is not expected to be pressure to obtain PSQ from these areas, in part because they were removed from the calculation of PSQ for this SEIS.

443. Comment: PSQ should not be viewed as “hard targets.”

Response: The Northwest Forest Plan ROD acknowledges the “rough approximation” nature of the PSQ “effects” and defers setting actual PSQ for individual administrative unit land and resource management plans. The PSQ numbers in this SEIS should be viewed in the same light; they are “estimated effects” not specific enough to apply to individual units, nor do the numbers re-declare PSQ. Individual administrative units may re-declare PSQ during plan revisions. The relationship of the PSQ to “targets” or laws may vary by agency and that relationship is not changed by this SEIS.

444. Comment: The Agencies should consider replacement volume as a mitigation measure, in accordance with NEPA.

Response: An alternative that maintains the PSQ at Northwest Forest Plan levels is discussed in the Alternatives Considered But Eliminated From Detailed Study section of Chapter 2.

445. Comment: The Agencies should incorporate new information about ingrowth, partial cutting, and wildfires into the formation of a new alternative. There may be more or less late-successional forest than the Northwest Forest Plan anticipated.

Response: The pie chart included in the Draft SEIS gave the incorrect impression that there was no annual increase (ingrowth) into late-successional forest. This has been corrected to show the ingrowth described in the Northwest Forest Plan Final SEIS. The purpose of the pie chart was to

help illustrate the potential risk of disturbing a site occupied by a very rare species. For a species with only one or two sites, ingrowth may make little difference in the short term and was not shown. Similarly the 2.5 to 4 percent to be “modified” in the first decade simply illustrates the level of potentially habitat-disturbing activities. Since it is labeled “partial cut, regeneration cut, and prescribed fire,” there was no assumption that this entire set of habitat would be removed. As described in the Forest Ecosystems section in Chapter 3&4, it is too early to tell if the combination of ingrowth and fire reductions is outside the range anticipated in the Northwest Forest Plan. Effectiveness monitoring for the Northwest Forest Plan has been set up to track the amount of late-successional forest over time. Additional discussion has been added to Chapter 3&4 explaining these points.

Species Review Process (Appendix F)

446. Comment: The Agencies should explain the assumptions in Appendix F.

Response: For purposes of consistency, each panel in the Species Review Process was given a set of assumptions for various components of the Northwest Forest Plan that might affect late-successional and old-growth related taxa. These assumptions included a compilation of all applicable standards and guidelines in the Northwest Forest Plan Record of Decision (USDA, USDI 1994a) and interagency implementation memoranda for standards and guidelines that might affect the habitat of the Survey and Manage taxa. These assumptions are contained in the administrative record and include exact text from the Northwest Forest Plan ROD and other publicly available documents.

447. Comment: The Agencies should include information gathered since the adoption of the Northwest Forest Plan in 1994.

Response: The Species Review Process included a thorough review of all available and pertinent data, including information gathered since adoption of the Northwest Forest Plan. The 1999 Species Review Process (that was used initially to assign species to Survey and Manage categories in the Draft SEIS) included data available at that time. The Species Review Process that was completed in March 2000 included data received from field offices following the release of the Draft SEIS for public review (data from the 1999 field season) and data received as public comments. The Final SEIS reflects this updated data. The updated data is included in the administrative record for this SEIS and is available for public review. The results of these analyses are summarized in Tables F-1 and F-2 in Appendix F. Tables 2-2, 2-4, 2-5, and 2-6 include summaries of these data related to the alternatives being considered. Tables F-1 and F-2 have been updated and expanded to include additional information about numbers of known sites and reasons for species categorizations. The SEIS does not include descriptions of field studies, species-specific maps, or detailed descriptions of individual species analysis (other than the detailed description of the analytical process itself in Appendix F). Including this information in the SEIS would result in thousands of pages of technical information being added to the SEIS, information that is otherwise available for public review and is available for future updates to species information in the annual Species Review Process.

448. Comment: The Agencies should analyze the probability that Survey and Manage species are already adequately protected in the reserve system.

Response: The Species Review Process has addressed this concern through consideration of the three basic criteria for Survey and Manage. The third of these criteria is “the reserve system and other Standards and Guidelines of the Northwest Forest Plan do not appear to provide for a reasonable assurance of species persistence.” While the reserve system of the Northwest Forest Plan is intended to meet the conservation needs of most late-successional forest associated species, some of these species, due to actual distribution outside of reserves, relative rarity, or very specific habitat needs, may not be adequately provided for by the reserves and other standards and guidelines. One of the tasks of the Step 2 panel in this process is to gather and summarize

information about how the reserve system and other Northwest Forest Plan Standards and Guidelines might provide for management of these species. (These data, while not reproduced in the Final SEIS, are available in the administrative record.) The Step 3 panel evaluates this information and proposes assigning species into an appropriate category. If the available information indicates that the species does not meet the three basic criteria, the species is not included in Survey and Manage. Species for which there remains uncertainty regarding the ability of the reserves and other standards and guidelines to provide a reasonable assurance of persistence may be assigned to Category 1E (for rare species) or Category 1F (for uncommon species). One goal of strategic surveys is to gather information for species in these categories to resolve this uncertainty and assign species into the applicable Survey and Manage category, or remove them, as appropriate. The reader is referred to Appendix F for a complete description of the Species Review Process and Chapter 2 for a more complete explanation of the application of the three basic criteria for Survey and Manage.

449. Comment: The Final SEIS should include provisions for full taxa team review of species data for accuracy prior to changes in species status.

Response: The Species Review Process includes three steps, each of which includes taxa specialists' input. The Step 1 panel consisted of teams of two to four taxa specialists who reviewed the availability of new information for all Survey and Manage species and made recommendations as to whether the new information was sufficient to require new species review. The Step 2 panel consisted of teams of four to seven taxa specialists and other scientists who reviewed available information gathered by the Step 1 panel and summarized this information for use by the Step 3 panel. The Step 3 panel evaluated all available information and compared these data against the three basic criteria for Survey and Manage and a list of criteria for inclusion in the Survey and Manage categories. Taxa specialists were available in an advisory capacity to the Step 3 panel and assisted that panel in understanding the available data. However, these taxa specialists were advisory only and did not participate in the actual category assignments. A role of each taxa specialist in this process was to review the available information for completeness and accuracy. This included contacts with other species specialists and contacts with professional organizations and societies, as well as review of pertinent literature and databases. Due to Federal Advisory Committee Act requirements, taxa specialists not employed by the federal government are not included as members of the species review panels, although they may provide data and other information through the various public involvement processes. The taxa specialists who participated in each of these panels are listed at the end of the Species Review Process description in Appendix F.

The description of the Species Review Process to be conducted in future years (see Adaptive Management sections for each of the action alternatives in Chapter 2) has been modified to include a requirement that the recommendations from the Step 3 panel be circulated to lead and cooperating agency taxa experts in draft to identify errors, conflicting information, or other evidence that should be included with the information presented to the RIEC.

450. Comment: The Agencies should evaluate habitat association criteria before any species removals.

Response: The Species Review Process was completed during March 2000 as part of the review of new information received through public comment on the Draft SEIS and included new information from the 1999 field season surveys. This additional review has included an evaluation of new information about habitat associations and relative rarity for Survey and Manage species. The results of this reevaluation are displayed in Tables F-1 and F-2 in Appendix F.

451. Comment: A number of public comments were received that raised such issues as: a particular species should be assigned to a particular category; a particular species range should be divided into two separate ranges with appropriate categories; the need to show the number of species locations within reserve land allocations; a particular species should be removed from the Survey and Manage Standards and Guidelines; and other comments related to why species were

assigned to which categories. Other commenters suggested that additional data should be considered in the Species Review Process. In general, the commenters suggested that the Agencies should clarify several issues relating to the assignment of individual species to Survey and Manage categories in the action alternatives.

Response: The Species Review Process collected all available information on the individual species and compared the information to a set of criteria for assignment in the six categories of Alternative 1 or removal from Survey and Manage. This included consideration of whether the information supported treating the species differently in different portions of its range. The most recent Species Review Process, as described in Appendix F, used the best available information, including a review of all data received since publication of the Draft SEIS (including public comments), as well as the data used in the Draft SEIS. The Species Review Process made changes to the proposed treatment of individual species as appropriate. As a result, some species have been proposed for reassignment to other categories or removal from Survey and Manage based on this new information. Appendix F and Tables F-1 and F-2 have been updated to reflect the results of that review.

Tables F-1 and F-2 briefly summarize the information that was considered most important to the assignment of the species under the criteria for the assigned category or removal of the species from the Survey and Manage Standards and Guidelines. Elements or criteria that were not key to the assignment of the species were not included in the summary. For example, a species may be considered rare based primarily on a very low number of likely extant sites on federally managed lands. In this case, the proportion of the currently known sites in reserves may be inconsequential to the species assignment because, even if all of the sites were in reserves, failure to continue surveys or management for the species would not provide a reasonable assurance of persistence.

452. Comment: The Agencies should consider information provided by the public before assigning species in Survey and Manage categories.

Response: The Species Review Process panels reviewed this new information and added it to the existing information as appropriate. New information was included in the Species Review Process and considered in decisions to change species between categories or to remove species from the Survey and Manage mitigation measure. Table F-1 has been updated and separated into two tables (F-1 and F-2) to reflect changes between the Draft SEIS and the Final SEIS and the reasons for including each species within the currently assigned category. Table 2-11 has been added to show changes to species categories between the Draft SEIS and the Final SEIS.

For future changes, revised language in Chapter 2 indicates the Agencies will involve the public and keep resultant changes and their application visible, so potential concerns about application of the above criteria to any particular species or area may be surfaced. The following methods will help to keep the public involved:

1. The Agencies will utilize a data call, open conference, or other method of soliciting appropriate new information about Survey and Manage species.
2. Individuals or groups wishing to receive the annual report should write to the Interagency Survey and Manage Program Manager, c/o Regional Ecosystem Office, P.O. Box 3623, Portland, OR 97208-3623 and request to be added to the mailing list. Public comments about species changes or anything else in the annual report are invited at any time and should also be addressed to the Interagency Program Manager.
3. Agency NEPA documents for activities will identify if any future changes in categories have been applied to the planned activity or will reference a specific years assignments, as documented in the annual report, that appropriately applies to that activity or project. Specific public concerns about the application of a particular species assignment may be directed at the activity applying the new assignment.

453. Comment: The Agencies should better identify range and habitat associations for Survey and Manage species.

Response: Many species are included on Survey and Manage because there is little information about them, including details about range and habitat associations. Strategic surveys are intended to gather information about Survey and Manage species, including information about habitat associations, effectiveness of reserves and other standards and guidelines in meeting persistence objectives, population status, life history, and geographical range. These surveys may also provide information on known site management, including important information on interior forest needs and effects of management actions on species persistence at specific sites.

454. Comment: The Agencies should provide greater detail in the affected environment sections for the species regarding number of sites, species background, and rationale for removal from Survey and Manage.

Response: This SEIS is tiered to the Northwest Forest Plan Final SEIS and duplication of detailed discussions of species is not appropriate here. Species specific sections in Chapter 3&4 have been expanded to address the most current information available. Information relating to numbers of recent federal sites has been added to Tables F-1 and F-2 and to narratives within Chapter 3&4, where appropriate. However, numbers of sites is only one criteria used to assign species to categories or rationale for removing species from Survey and Manage. Rationale for removing species from Survey and Manage is also presented in Chapter 3&4 and Tables F-1 and F-2.

455. Comment: The Agencies should consult with non-agency taxonomists for any change of status requests.

Response: Taxa specialists utilized in the Species Review Process are employed by the Agencies. As part of their roles in the Species Review Process, these specialists access available information related to the Survey and Manage species within their area of taxonomic expertise. Field units are requested to provide data on these species as obtained from field surveys completed by staff or through contract procurement, as well as other sources. In addition, data and other pertinent information received during the Draft SEIS public comment process has been reviewed and incorporated into Agency data files, as appropriate, for use in the Species Review Process that occurred during March 2000. The intent is to gather all pertinent available information related to Survey and Manage species. Taxa specialists employed by the Agencies are also in communication with peers from outside the Agencies and with professional organizations and societies with particular expertise for these taxonomic groups. The Federal Advisory Committee Act limits the extent to which non-agency persons can participate as a group which directly advises agency decision-makers. Taxonomic experts from outside the Agencies have provided information and data for use in the species review process. Language in the Final SEIS has been amended to include a requirement for an annual data call in an effort to obtain pertinent information from non-agency sources.

456. Comment: The Agencies should not approve an amendment that alters species survey requirements.

Response: The action alternatives propose to alter species survey requirements to better address management objectives and meet species information needs for the revised Survey and Manage categories. These modifications better address species' needs, the three basic criteria for Survey and Manage, relative rarity of the species, and the survey practicality of the species. These changes are anticipated to better address information needed to address concern for species persistence. The Final SEIS includes a more detailed description of strategic surveys and equivalent-effort surveys that clarify their intent and their role in addressing the species management objectives. The Final SEIS further clarifies language that describes activities that would constitute a significant negative impact and identifies the circumstances that assist the line officer in determining the need for survey based on site-specific information.

457. Comment: The Species Review Process mentions the participation of managers in what should be a purely biological decision.

Response: The Step 3 panel is conducted primarily by species specialists using the most current information about each species. Taxa specialists participate and clarify information or answer questions as appropriate. One or two managers participate on the Step 3 panel that includes 5-7 biologists to help the discussion relative to survey practicality and other implementation issues, to potentially provide a broader perspective when species are being discussed with the experts and to help ensure consistency between taxa. They are equal with other members of the team and do not have veto authority. Additionally, the Agencies' managers frequently have education and expertise in biology and botany and contribute their own technical expertise on these issues; they are not limited in their expertise to management and administrative responsibilities.

458. Comment: The Species Review Process should include a cumulative effects analysis in all steps of the process.

Response: Cumulative effects were considered in all steps of the Species Review Process. They were considered in Step 1 to the extent they represented new information about concerns for persistence of the species. However, because the purpose of this step was to determine the species for which there was significant new information since FEMAT, cumulative effects already acknowledged in Appendix J2 of the Northwest Forest Plan Final SEIS were not restated in Step 1. Step 2 considered the cumulative effects and nonfederal threats to species and recorded any new information on how cumulative effects could affect the concern for persistence of the species. Cumulative effects were also considered in Step 3 as mitigating information relative to the number of likely extant federal sites. Cumulative effects, including those described in the Northwest Forest Plan Final SEIS Appendix J2, were fully considered relative to whether they increased or decreased the concern for persistence and the stability of known sites.

459. Comment: The Final SEIS should include quantitative and qualitative standards for evaluating species persistence and their likelihood of being "well distributed" within the Northwest Forest Plan area.

Response: Many of the species and taxa groups included in the Survey and Manage Standards and Guidelines are of concern because our knowledge of their biology and habitat is very limited. The level and type of information available to evaluate the concern for persistence and their distribution within the planning area varies widely among taxa groups and even among species within a taxa group. Further, interpreting the significance of quantitative information requires knowledge of how the data was acquired. A few sites discovered incidentally to other work provides different information than the same number of sites discovered during thousands of acres of coordinated and designed pre-disturbance surveys. Therefore, there is no single set of quantitative or qualitative standards that would work for all species or taxa groups. To promote consistency in the evaluation of species, the action alternatives include a set of criteria and examples to guide their use (see Appendix F for a detailed description). These are designed to allow consideration of any type of information available for a species that would provide insight relative to the individual criteria.

460. Comment: Criteria used to assign species to Survey and Manage categories may not include all of the factors that might affect species' stability and distribution.

Response: The criteria for concern for persistence and the criteria for assigning species into categories may not include all factors that might affect a species stability and distribution, but they do include the key factors that pertain to most species. They represent the information that currently plays the greatest role in the determination of the concern for a species' persistence. If other factors are determined in the Species Review Process to be important in evaluating whether a species should be included in one of the Survey and Manage categories, they could be considered. Some of the additional factors suggested, such as site history and species ecology, are already incorporated in the broader existing factors. Others, such as global changes, are included

to the extent that they affect the condition and stability of occupied sites within the Northwest Forest Plan area.

461. Comment: The Agencies should include known sites on nonfederal lands when determining a species' relative rarity.

Response: Known sites of Survey and Manage species on nonfederal lands are considered when determining species rarity and management needs on federally managed lands. However, there is little assurance that many of these sites still exist or will continue to exist in the future due to management activities on these nonfederal lands. Many of the species are endemics, poorly distributed, or poorly connected, so sites on nonfederal lands may not particularly contribute to meeting distribution objectives on federally managed lands. This is a particular problem for the Forest Service because the National Forest Management Act viability provision applies to each administrative unit (i.e. National Forest). For all of these reasons, sites on nonfederal lands would likely play only a minor role in contributing to the Northwest Forest Plan species persistence objectives for Survey and Manage species. This follows the original screening criteria described in the Northwest Forest Plan. The original FEMAT viability screens were based on the likelihood of species populations stabilizing in various distribution patterns "across federal lands" (USDA, USDI 1994a, p. J2-2). The action alternatives presented in this SEIS do not propose to change this criteria.

462. Comment: The SEIS should state the percentage of every taxon's known sites that are in reserves and it should discuss how the reserves meet the needs of the taxon.

Response: The number of sites within reserve land allocations is only one criteria used to assign species to categories. This information is contained in the administrative record of the Species Review Process. When information on the actual locations of known sites was adequately precise, this information was considered when assigning species to appropriate categories. This is often not possible when considering the location of sites in relation to the often-unmapped Riparian Reserves. Where this criterion was considered important for the assignment of the species, the information was included in summary tables (Tables F-1 and F-2). However, for many species, the percentage of known sites in reserve land allocations was not a primary factor in its assignment. For example, a species may be considered rare primarily based on a very low number of likely extant sites on federally managed lands. In this case, the proportion of the currently known sites in reserves may be inconsequential to the species assignment because, even if all of the sites were in reserves, failure to continue surveys or management for the species would not provide a reasonable assurance of persistence. Focusing on the number of sites within reserve land allocations alone would place inappropriate weight on that criteria. In the future, strategic surveys will provide the information needed to more accurately assess the relative contribution of Riparian Reserves and Late-Successional Reserves to the persistence of these species.

463. Comment: Tables that identify new locations should be included for all species not just mollusks and fungi.

Response: Tables 3&4-2 and 3&4-4 in the Draft SEIS that summarized the number of new mollusk and fungi sites since the Northwest Forest Plan ROD have been replaced in the Final SEIS by expanded summary tables in Appendix F (Tables F-1 and F-2). These summary tables now include the number of recent sites for all Survey and Manage species. This information has been included since it provides information to the reader pertinent to species category assignment in the Species Review Process.

464. Comment: The definition of site for mollusks differs from that used for other species, which leads to a misinterpretation of the number of sites and results in bias in the evaluation process.

Response: For a variety of reasons related to site management and species' biology, the definition of a site or record in the ISMS database varies by taxa group, particularly for the terrestrial mollusks. The Species Review Process panels were fully aware of this potential inconsistency and

considered the information for terrestrial mollusks accordingly, to avoid unacceptable bias. One of the advantages of using a qualitative criteria approach, rather than a strict quantification of numbers, is that it allows for a more reasonable consideration of numeric criteria that vary widely across and within species groups. A more complete discussion of this issue has been included in Appendix F. The definition of site and known site has also been clarified in the glossary.

465. Comment: There is no identified means of quality control for information used in the species review process or for evaluations of management techniques and their effectiveness.

Response: Quality control methods have been identified in the Final SEIS. The standards and guidelines now include provisions for an information data call prior to conducting the annual species review process. Also, the recommendations of the Step 3 panel will be made available for agency (internal) comment for 30 days prior to RIEC review and approval and dissenting opinions will also be forwarded to the RIEC. Evaluations of the effectiveness of management are discussed in the expanded monitoring section and in the 1994 Northwest Forest Plan Final SEIS.

Appendices

Appendix C

466. Comment: The Agencies should disclose if extensive or general regional surveys for all species were underway by 1996.

Response: Extensive and general surveys were to start by 1996 for 336 Survey and Manage species. The Agencies were slow to implement these surveys in part because their objectives were poorly defined and, in part, because of the unprecedented effort to get other aspects of the Northwest Forest Plan underway. Some of these efforts included preparation of Management Recommendations and Survey Protocols for Component 1 and 2 species. Table 2-1 in this Final SEIS illustrates progress with preparation of Management Recommendations and Pre-disturbance Survey Protocols as of August 4, 2000.

The extensive and regional surveys shown on Table C-3 of the Northwest Forest Plan ROD were to be initiated no later than fiscal year 1996 and be completed within 10 years. Planning and initiation of survey efforts was underway in fiscal year 1996. There are a total of 336 species included in Components 3 and 4 as follows: 4 arthropod guilds in Component 4; 15 bryophytes in Component 3 and 3 in Component 4; 36 lichens in Component 3 and 45 in Component 4; and 233 fungi in Component 3 and 21 in Component 4 (which are also included in Component 3) (USDA, USDI 1994b, Table C-3). Studies related to arthropods in the south range were initiated in late fiscal year 1996. A regional mycologist and a regional lichenologist/bryologist were hired by the end of fiscal year 1996 to initiate and plan appropriate extensive and regional studies. Prioritization of fungi, lichen, and bryophytes for more detailed inventory was completed by July 1997. Inventory work is still ongoing. Initiation of general and regional surveys has been a more difficult undertaking than originally anticipated.

Appendix E

467. Comment: The Agencies should clarify the criteria for defining species associated with late-successional and old-growth forests.

Response: Appendix E, Criteria for Identifying Species Closely Associated With Late-Successional and Old-Growth Forests, has been modified (and renamed) from the original FEMAT version included in the Draft SEIS. The modified version better reflects the way the criteria were used by the Step 3 Panel when conducting the Species Review Process. These criteria will be used in the future. Evidence of association with late-successional forests is reviewed annually during the species review process and species will be removed if they do not meet these criteria. In this SEIS, 22 species are proposed for removal because they do not meet the criteria.

Appendix G

468. Comment: The Agencies should provide actual timber harvest data for 1994-1999.

Response: The amount of timber offered for years 1995 through 1999 has been added to the Timber Harvest section in Chapter 3&4. Data for 1994 is not generally included in reports of Northwest Forest Plan timber harvest volumes because timber harvest volumes for 1994 were limited by injunction and would include some volume from both before and after the Northwest Forest Plan was adopted on April 13, 1994.

Appendix H

469. Comment: The Final SEIS should not include so much information on bryophytes and amphibians.

Response: Appendix H from the Draft SEIS has not been included in the Final SEIS. As needed, information was moved into the bryophytes or amphibian sections in Chapter 3&4.

Miscellaneous

ISMS Database

470. Comment: The Agencies should make the ISMS and Known Site databases easily available to the public to facilitate review of data accuracy and quality control by the scientific community.

Response: The Agencies are considering ways to provide this information, in a readable format, to the public. The current plan is to make an updated ISMS database (which includes the Known Site Database) available to the public twice each year. Requests could be made by mail or through the REO web site. The ISMS is still in its infancy as explained in Appendix D. Policies and procedures for data quality assurance in the ISMS database are being re-evaluated. Quality control and consistency of data input across taxa is still being addressed at the regional level.

Tables and Figures

471. Comment: Table 2-2 should include category definitions for clarity.

Response: Table 2-2 should be used in conjunction with the text. The action alternatives include 13 different categories, each defined by combinations of level of rarity, survey practicality, and status unknown. The No-Action Alternative includes four additional categories. There are no simple definitions that would reasonably fit on this table.

472. Comment: Figure 1-1 should be given a title that more precisely reflects its contents.

Response: Figure 1-1 has been redesigned, relabeled, and better referenced in the text.

473. Comment: Figure 1-2 should be revised to show how the alternatives compare in protecting late-successional forest.

Response: The discussion of late-successional forests in the Forest Ecosystem section of Chapter 3&4 has been expanded to include a discussion of ingrowth and the effect of managing different acreage levels of known sites under each alternative. Figure 1-2 has been revised.

Editorial Errors

474. Comment: The Agencies should correct errors in the Draft SEIS.

Response: Editorial errors were corrected. However, others were undoubtedly created.

Glossary

475. Comment: The definition of “species” should be revised to include distinct evolutionary lineages.

Response: The glossary defines species as a “taxon” specifically for this purpose.

476. Comment: The use of “well distributed” should be modified to reflect that some species were naturally fragmented.

Response: The use of “well distributed” has been modified in the Final SEIS. Descriptions of reference distribution patterns and other considerations of natural distribution patterns are explained primarily in the Background section early in Chapter 3&4. Additional information is included in the glossary and in the description of persistence in Chapter 2.

477. Comment: What was referred to as LSOG in the Northwest Forest Plan is now just referred to as late-successional. You cannot just eliminate old growth from this classification.

Response: Actually the use of “late-successional and old growth” has always been repetitive. Late-successional forests include old-growth forests. Old growth is a subset of late-successional. This has been clarified in the glossary.

478. Comment: Terminology in the Draft SEIS should be more clearly defined.

Response: An effort has been made to clarify and more uniformly apply terms in the Final SEIS. Some terms in the glossary have been more clearly defined and additional terms have been added.

479. Comment: The definition of “implemented” in the glossary of the Draft SEIS should be made consistent with the definition issued by the Forest Service Deputy Chief in an October 1999 memo relating to the 36 CFR 215 regulations.

Response: The word “implemented” has been removed from the glossary and from the standards and guidelines because of potential confusion with its use as defined in the referenced memo. However, for reasons described in the Surveys Prior to Habitat-Disturbing Activities section in Chapter 2, pre-disturbance surveys will continue to be required prior to the signing of the NEPA decision or decision document. This information needs to be available to the decision-makers so they can make informed decisions prior to commitment of resources. This date is used, in part, because these species are not listed under the Endangered Species Act, nor are they historic sites where an individual loss may be crucial. Agencies may choose to, and typically do, manage additional sites found during project layout and contract preparation.

Appendix J

Information Summary and Analysis Process for the Experts Writing the Species Effects Sections

Province LSOG Lichen Scientific Analysis Team
ISMS Practical Surveys Amphibians **KNOWN SITE**
Bryophytes *Refugia* **Matrix**
Rare *Uncommon*

MOLLUSKS Arthropods Management
Recommendation

...and for another example...

CANADA LYNX

Late Successional Reserves

Concern for Persistence

ESQ

Protection Buffer Species

FEMAT

taxon

Mitigation Measures



Biological Distribution

Appendix J

Information Summary and Analysis Process for the Experts Writing the Species Effects Sections

To the extent that species information was available, effects writers for this SEIS compiled and analyzed species information with the aid of the summary forms and processes briefly described here.

Background

To ensure consistent interpretation and use of available information between writers of species-specific effects analysis across taxa groups, a process was developed to collect and summarize information and elements for each taxon. Writers were provided copies of all information available to, and the results of, the species review process panels. The writers were then asked to summarize the information.

Taxon Analysis Summary Table

Using the information from the species review process (see Appendix F) and their professional background with the species or group, each writer was asked to complete a Taxon Information Summary table for each species (see Figure J-1). To promote consistency, writers were provided with instructions and criteria for each element of the taxon information summary table (see Figure J-2). The table allowed the writer to summarize information on the range, distribution, population size, habitat, effect of Northwest Forest Plan land allocations, and number of sites for each species, as well as indicate the level of confidence in the answer. These tables were initially completed during the development of the Draft SEIS. In April 2000, during development of the Final SEIS, many of these Taxon Information Summary tables were updated with 1999 survey data and other new information .

Supplemental Taxon Summary Sheet

During development of the Final SEIS, writers were asked to complete a Supplemental Taxon Summary Sheet (Figure J-3) for each species, and were provided with instructions and criteria to promote consistency between writers (Figure J-4). Writers were also provided with a set of Effects Definitions (glossary terms) for use in the summary analysis (Figure J-5). In this process, the writers were asked to use the previous taxon information summary tables to characterize the historic and current overall range and distribution within that range. They were then asked to estimate the current and future biological distribution and size of individual populations. Writers were also asked to estimate the potential future condition of all four of these elements under the No-Action Alternative and the action alternatives. In all cases, the writers indicated the level of confidence in their answers.

Outcome/Uncertainty Matrix Form

Writers then estimated the stability of the species population, based on factors such as stability of the species' habitat and environment, number of sites, population size, and life history. Using their estimate of the stability of the species population and the information from the Supplemental Taxon Summary Sheet, the writers completed the Outcome/Uncertainty Matrix Form (Figure J-6),

including qualifying the level of uncertainty in the conclusion. As this process required the writer to compare expected distribution patterns against what would be considered “well-distributed” for the species, each was provided with a definition of a variety of distribution patterns that may be normal for different species (Figure J-7). A description of the outcomes and process for considering uncertainty are described in the Outcomes Determined from Species Stability and Changes of Patterns of Distribution section of Chapter 3&4.

Standard Conclusions

Finally, writers were asked to select from a series of standardized conclusions (Figure J-8) and provide the assumptions and rationale supporting the conclusion within the individual species effects section.

Figure J-1

Table #. Taxon Information Summary										
Taxon:										
Author:										
Taxa Group:										
Date:										
Element	Level							Confidence		
Overall Range (2A3)	Wide-spread	Moderate	Limited	Very Limited	Extremely Limited	Unk.	Other	From Step 2 Notes		
Substantial Change from Historic Range	Yes	No				Unk.	Other	H	M	L
Distribution within Range (2A2)	Wide-spread and even	Wide-spread but spotty	Limited throughout	Limited to small portion		Unk.	Other	From Step 2 Notes		
Substantial Change from Historic Distribution	Increase	Decrease	No Change			Unk.	Other	H	M	L
Size of Individual Populations (2A1 comments)	High	Moderate	Low			Unk.	Other	H	M	L
Breadth of Habitat Association (2B1 & 2)	Very Broad	Broad	Medium	Narrow	Very Narrow	Unk.	Other	H	M	L
Distribution of Current Sites in Protected Land Allocations	Wide-spread and even	Wide-spread but spotty	Limited throughout	Limited to small portion		Unk.	Other	H	M	L

Figure J-1, continued

Element	Level							Confidence		
	Wide-spread and even	Wide-spread but spotty	Limited through-out	Limited to small portion		Unk.	Other	H	M	L
Distribution of Current and Projected Sites in Protected Land Allocations										
Potential Federal Habitat Protected (3D)	Low	Moderate	High			Unk.	Other	From Step 2 Notes		
Current and Projected Sites in Protected Land Allocations	High	Moderate	Low			Unk.	Other	H	M	L
Sensitivity to Management	High	Moderate	Low			Unk.	Other	H	M	L

Number/Proportion of Sites/Records

Total Records/Sites (2A1) _____
 Federal Records/Sites (2A1) _____
 Likely Extant Federal Records/Sites (table) _____
 Federal Records/Sites in Protected Land Allocations (3C) _____

Comments: (Other information relative to interpreting the number of records/sites)

Figure J-2

Instructions and Criteria for Taxon Information Summary

Element Definition

Overall range of species within NFP area (based on known and suspected range) (from Step 2 Question 2A3).

Optional answers:

Widespread within the NFP area (found or suspected in most provinces)

Well distributed within NFP area (found or suspected in several provinces, over more than 1 state)

Limited within NFP area (found or suspected in a few province, may be limited to one state)

Very limited within NFP area (found or suspected in only 1 province or similar small area)

Extremely limited within NFP area (only found or suspected at 1 or a few very specialized locations such as springs or natural refugia)

Other

Substantial Change from Historic Range: Has there been a substantial change in the historic range of the species (not just our knowledge of the species' range)? ?

Optional answers:

Yes

No

Unknown

Other (describe)

Distribution of known sites within suspected range of the species in the NFP area (from Step 2 Question 2A2).

Optional answers:

Widespread within the suspected range

Found throughout the suspected range, but distribution of known sites spotty

Limited locations scattered throughout the suspected range

Limited locations confined to a small portion of the suspected range

Other

Substantial Change in Distribution Within Species' Range from Historic:

Optional answers:

Increase

Decrease

No Change

Unknown

Other (describe)

Figure J-2, continued

Size of Populations at Individual Sites (may be in Step 2, Question 2A1 comments):

Optional answers:

- High
- Moderate
- Low
- Unknown
- Other (describe)

Breadth of habitat association: If a broad or very broad habitat association is based on a simple lack of habitat knowledge, please indicate so. (from Step 2 Question 2B2.)

Optional answers (based on the panel's current level of knowledge of species-habitat):

Habitat requirements

- Very broad (e.g. on wet to dry sites under conifers or hardwoods, permanent streams)
- Broad (e.g. wet coniferous forest)
- Medium (e.g. a few association series, rocky soils in forests)
- Narrow (e.g. talus, 1 or 2 plant association series, serpentine, very oligotrophic lakes)
- Very narrow (e.g. cliff face in fog zone, single uncommon tree species, caves, single uncommon plant association)
- Other

Confidence in the knowledge of habitat association of species for above question: (from Step 2 Question 2B1.)

Optional answers:

- High - Habitat association is well known from species-specific studies or surveys with habitat data, representing a good portion of the range of the species and allowing us to define specific habitat associations across the range or fairly well known from survey or study with some habitat information, representing more than 1 part, but not all of, the range of the species and allowing for some specificity of habitat association across the range.
- Moderate - general information based on several locations and surveys, with limited habitat information and/or limited coverage of range of the species, allowing for general description of habitat association across the range
- Low - limited information based on a few locations and surveys, with limited habitat information and/or limited coverage of range of the species, allowing for very general description of habitat association across the range or poorly known - few to only one known location - little documented habitat information
- Other

Distribution of currently-known sites within protected land allocations (LSR and Congressionally-withdrawn lands) as compared to the suspected range of the species in the NFP area.

Optional answers: Within protected land, distribution of sites is:

- Widespread and generally evenly distributed within the suspected range
- Found throughout the suspected range, but distribution of known sites spotty
- Limited locations scattered throughout the suspected range
- Limited locations confined to a small portion of the suspected range
- Other (describe)

Figure J-2, continued

Distribution of all sites (current and projected) within protected land allocations (LSR and Congressionally-withdrawn lands) as compared to the suspected range of the species in the NFP area.

Optional answers: Within land allocations, distribution of sites is:

- Widespread and generally evenly distributed within the suspected range
- Found throughout the suspected range, but distribution of known sites spotty
- Limited locations scattered throughout the suspected range
- Limited locations confined to a small portion of the suspected range
- Other (describe)

Likely proportion of all sites (current and projected) sites in protected land allocations (LSR and Congressionally-withdrawn lands):

- Low: a low proportion of the current and projected sites (approximately 1-19 percent) is likely to be within protective land allocations.
- Moderate: a moderate number of current and projected sites (approximately 20-70 percent) is likely to be within protective land allocations.
- High: most current and projected sites (> 70 percent) are likely to be within protective land allocations.

Confidence: High Moderate Low

Sensitivity to Management:

Number/Proportion of Sites/Records

- Total Records/Sites (2A1) _____
- Federal Records/Sites (2A1) _____
- Likely Extant Federal Records/Sites (table) _____
- Federal Records/Sites in Protected Land Allocations (3C) _____

Comments: (Other information relative to interpreting the number of records/sites)

Figure J-3

Supplemental Taxon Summary Sheet

Species: _____ Date: _____

Preparer: _____ (Attach list of reference materials)

Element	Level							Uncertainty		
	Wide-spread	Moderate	Limited	Very limited	Extremely limited	Other	Unk.	H	M	L
Overall range (Geographic)										
Historic										
Current										
Future: NAA										
Future: Alt 1										
Future: Alt 2										
Future: Alt 3										
Distribution within range (Geographic)	Wide-spread and even	Wide-spread but spotty	Limited throughout	Limited to small portion	Other	Unknown		H	M	L
Historic										
Current										
Future: NAA										
Future: Alt 1										
Future: Alt 2										
Future: Alt 3										
Biological distribution	Pattern 1 Isolated sites	Pattern 2 Isolated site clusters	Pattern 3 Limited connectivity	Pattern 4 Multiple connectivity	Other	Unknown		H	M	L
Historic (Reference)										
Current										
Future: NAA										
Future: Alt 1										
Future: Alt 2										
Future: Alt 3										
Size of individual populations	High	Moderate	Low	Other	Unknown			H	M	L
Historic										
Current										
Future: NAA										
Future: Alt 1										
Future: Alt 2										
Future: Alt 3										

Figure J-4

Instructions and Criteria for Supplemental Taxon Summary Sheet	
Element Definition	
Overall [suspected] range of species within NFP area (based on known and suspected range) (from Step 2 Question 2A3).	
Optional answers:	
Widespread within the NFP area (found or suspected in most provinces)	
Moderate within NFP area (found or suspected in several provinces)	
Limited within NFP area (found or suspected in a few province).	
Very limited within NFP area (found or suspected in only 1 province or similar small area)	
Extremely limited within NFP area (only found or suspected at 1 or a few very specialized locations such as springs or natural refugia)	
Other (describe in text)	
Unknown	
Distribution of species occurrences within suspected range of the species in the NFP area (from Step 2 Question 2A2).	
Optional answers:	
Widespread within the suspected range	
Found throughout the suspected range, but actual occurrences spotty	
Limited locations scattered throughout the suspected range	
Limited locations confined to a small portion of the suspected range	
Other (describe in text) Unknown	
Biological Distribution: <i>For a description of patterns, see Olson and O Dell 6/15 definition</i>	
Optional answers:	
Pattern 1: Isolated sites	
Pattern 2: Isolated site clusters	
Pattern 3: Limited connectivity among multiple sites and/or clusters	
Pattern 4: Multiple avenues of connectivity among sites and clusters	
Other (describe in text)	
Unknown	
Note: Where biological distribution occurs as a mixed pattern, indicate all patterns that may apply. Indicate in the text where each pattern identified in the mix applies.	
Size of Individual Populations:	
Optional answers: (note - factors influencing these responses need to be describe in the text)	
High	
Moderate	
Low	
Unknown	
Other (describe)	

Figure J-5

Effects Definitions

Well Distributed: This term is generally defined in the FEMAT report as

A geographic distribution of habitats that maintains a population throughout a planning area and allows for interaction of individuals through periodic interbreeding and colonization of unoccupied habitats.

For species considered in this SEIS, this term is defined as

Distribution sufficient to permit normal biological function and species interactions, considering life history characteristics of the species and the habitats for which it is specifically adapted.

Stable: A taxon that, over time, maintains population numbers, given inherent levels of population fluctuation and **variability of** habitats to which they are adapted. The species may become stable at a different population level than the current or (inferred) historical level.

Geographical Distribution: The physical distribution of a species as described at multiple scales, including the overall range within a landscape of interest, and the local distribution within its overall range.

Biological Distribution: The distribution of species occurrences in suitable habitats within its geographic distribution, interpreted according to the ability of that distribution to support **species** biological functions and species interactions.

Reference Distribution: Historic or inferred **biological** distribution pattern (limited by historic potential) that serves as a baseline to compare current and future distribution. For purposes of this analysis, the reference distribution is considered to be well-distributed .

Historic (as in distribution): In general, when applied to either **biological or geographic distribution**, refers to time periods before European settlement. Historic should be estimated over a long-enough period of time to encompass the range of variability resulting from disturbance and ecological processes.

Uncertainty: As used in the Outcome/Uncertainty matrix, is the lack of predictability **due to** lack of knowledge (basis to predict an outcome) or **due to** unpredictable environmental variation and stochasticity (risk to projected outcome). Disturbance within the expected range of variability should not be considered uncertainty.

Figure J-6

Survey and Manage Outcome Descriptions

Species: _____ Date: _____
 Prepared By: _____

OUTCOME/UNCERTAINTY MATRIX FORM

Level of Uncertainty ¹	Outcome ² 1 - Reference Distribution & Stable		Outcome 2 - Altered from Reference Distribution & Stable		Outcome 3 - Not Stable		Outcome 4 ⁴ Unknown Distribution & Unknown Stability	
Low ³	1		2		3		10	
Moderate	4		5		6			
High	7		8		9			

¹ Uncertainty, for this exercise, is defined as: Lack of predictability, either from lack of knowledge (basis to predict an outcome) or from environmental variation and stochasticity (risk to projected outcome).
²See Outcome Descriptions in definitions.
³ Assumed level of Uncertainty if no other level is stated in the following standard conclusion statements.
⁴ Outcome 4 should be used when information regarding a particular species results in an unknown distribution and unknown stability. The effects under each alternative would be the same. Therefore, if outcome 4 is used, it will apply to all alternatives.

The standard conclusion statements require a reason (**lack of knowledge or environmental stochasticity**) for moderate and high uncertainty.
 Risk of loss of sites or change in referenced distribution due to management (i.e. the alternatives) is captured in the outcome matrix.

Figure J-7

Patterns of Biological Distribution

To assess *biological* distribution patterns across taxa and to make determinations of whether or not species are well-distributed, basic knowledge is needed of species rarity patterns (Rabinowitz 1981), population structure and dynamics (e.g., Gilpin and Hanski 1981; Harrison 1994), connectivity (e.g., Harrison and Voller 1998), and fragmentation (e.g., Meffe and Carroll 1997). These concepts incorporate habitat associations, dispersal abilities, and life history elements. The spectrum of potential distribution patterns might be somewhat reduced for rare endemic species, such as many of those under the Survey and Manage provision. However, several distribution categories can be described for such species with restricted spatial patterns.

This document provides a framework for classifying distribution patterns for Survey and Manage taxa, including patterns that would be considered well distributed.

Well distributed: For application to Survey and Manage species, well distributed means distributed sufficient to permit normal biological function and species interactions, considering life history characteristics of the species and the habitat for which it is specifically adapted. This can be restated as species Outcome 1: Habitat (including managed species sites) is sufficient to allow species to stabilize in a pattern similar to historic pattern of distribution.

Following are options for determining whether or not a species is assessed as well-distributed under the SEIS alternatives.

Assumptions and Distribution Framework

If historic distribution pattern is known:

In the context of this SEIS, the reference state of a taxon's distribution is its historic pattern in the planning area. As such, well-distributed refers to any historic species distribution, regardless of whether or not that distribution is likely to be stable. Thus, a well-distributed species with a very restricted spatial pattern may be in an unstable state and go extinct over the long-term.

If historic distribution is not known:

historic distribution might be inferred if the following 4 elements are known or can be estimated -- habitat associations, occupancy rate in suitable habitat, historic habitat distribution, and potential past disturbance signatures (e.g., gaps in distribution from catastrophic fires, landslides, volcanic explosions)

and if it cannot be inferred, our best knowledge is the currently known distribution (plus any inferences that are possible given limited knowledge), which is then our reference state for well-distributed.

Reference distributions for a species or taxa are a continuum from isolated sites to homogenous or continuous patterns across a landscape, with intermediate patterns having varying patch sizes and configurations, fragmentation and connectivity. As a framework for discussion, four categories

Figure J-7, continued

of species distribution patterns are described: 1) Isolated sites; 2) Isolated site clusters; 3) Limited connectivity of sites and/or clusters; 3) Multiple avenues of connectivity among sites and clusters. Across taxa, these are spatiotemporal scale- and grain-dependent categories. A species may be classified into a single category, or described as a mix of categories across its range (for example, $\frac{1}{2}$ of known sites might be Pattern 1, $\frac{1}{4}$ in Pattern 2, and $\frac{1}{4}$ in Pattern 3).

Pattern 1: Isolated sites -- The species has highly isolated occurrences or populations, with little potential for gene flow between them. An extremely rare species may be known from a single site.

Pattern 2: Isolated site clusters -- The species is distributed as groups or clusters of occurrences or sub-populations, with good potential for gene flow among subpopulations within the groups (i.e., metapopulation or source-sink dynamics) and little potential for gene flow between the isolated groups. This distribution pattern results in a higher effective population size within site clusters than would occur if sites were isolated as in the first pattern, above.

Pattern 3: Limited connectivity among multiple sites and/or clusters -- The species has a spatial pattern with potential for connectivity between isolated sites or isolated site clusters. The distinction between this pattern of connected sites or clusters and isolated site clusters, pattern 2 above, may be a taxon specific determination, and may be an issue of spatio-temporal scale or spatial configuration. Strings of sites may have the potential for connectivity, but may not function as a cluster. Gene flow between sites and clusters may be less frequent than within isolated clusters. Populations in distinct geographic locations or ecoregions might be identified as separate clusters, and connectivity may occur as intervening stepping stones of suitable habitats, refugia or suboptimal dispersal habitats.

Pattern 4: Multiple avenues of connectivity among sites and clusters -- The species has multiple sites and/or clusters of sites which are nested within a web of potential inter-connections. The extreme case would be a homogeneous or uniform distribution pattern. Many species with specific habitat affinities occurring in heterogeneous landscapes would have gaps in their distribution, but could still maintain multiple potential connectivity pathways.

Not well-distributed (or Outcomes 2 or 3) indicates that the distribution has been significantly altered from the historic state via anthropogenic disturbance or will be altered from current state by the SEIS alternatives such that population and/or habitats are affected such that interactions among individuals are limited in some portions of their range. To become not well-distributed is a taxon-specific determination, a taxon may be assessed to move between distribution categories, or to have a significantly altered distribution within a category. Examples of determinations of not well-distributed are provided below for each distribution pattern.

Figure J-7, continued

Pattern 1: For a species with a distribution of isolated sites, loss of any sites might be considered a dire condition and assessed as becoming not well-distributed.

Pattern 2: Loss of single sites might **not** result in a not well-distributed assessment for Pattern 2. However, loss of single sites that serve a significant role for population persistence, such as a source subpopulation within a cluster of neighboring sites, or in the biological diversity of the taxon (e.g., a distinct population segment), might result in a determination of not well-distributed. If there are few clusters, risk to a single cluster might result in a not well-distributed determination. Depending on number of sites and clusters, and their distribution across the species range, loss of single or multiple significant sites or site-clusters may or may not result in a not well-distributed determination. Each potential loss scenario needs to be evaluated in terms of its effect on the effective population size and influence on population or metapopulation stability.

Pattern 3: Loss of single sites might **not** result in a not well-distributed assessment for Pattern 3. However, loss of single sites that serve a significant role for population persistence, such as a source subpopulation within a cluster of neighboring sites or a stepping stone subpopulation along a connectivity area, or in the biological diversity of the taxon (e.g., a distinct population segment), might result in a determination of not well-distributed. If there are few clusters, risk to a single cluster might result in a not well-distributed determination. Depending on number of sites and clusters and connectivity areas, and their distribution across the species range, loss of single or multiple significant sites or site-clusters may or may not result in a not well-distributed determination. Each potential loss scenario needs to be evaluated in terms of its effect on the effective population size and influence on population or metapopulation stability.

Pattern 4: For a species with multiple avenues of connectivity among sites and clusters, it might be possible for it to remain well-distributed with numerous losses of sites and connections among sites, and gaps in its distribution. However, fragmentation should be recognized as a serious risk to population stability, and the projected distribution pattern need not move to the limited connections category for it to be determined to be not well-distributed. As in Pattern 3, loss of single sites that serve a significant role for population persistence, such as a source subpopulation within a cluster of neighboring sites or a stepping stone subpopulation along a connectivity area, or in the biological diversity of the taxon (e.g., a distinct population segment), might result in a determination of not well-distributed.

Pattern Mix: For a species that is best described as having a mix of distribution patterns across its range, the mix should be assessed under the different management alternatives and compared to the reference state. To become not well-distributed, the change within and among patterns should be described, using concepts such as those presented above for Patterns 1-4. Are potentially significant sites, clusters, or connections affected?

Figure J-8**STANDARD CONCLUSIONS**

(Listed by cell number as they appear in above table)

In moderate or high uncertainty conclusion statements, name **and describe** the source of uncertainty (lack of knowledge or **environmental** stochasticity).

L-1. Alternative ___ would provide sufficient habitat (including known sites) to allow the species to stabilize in a pattern similar to its reference distribution.

L-2. Alternative ___ would provide habitat (including known sites) sufficient to allow species to stabilize in a pattern different from its reference distribution..

L-3. Alternative ___ would provide inadequate habitat to maintain the species.

M-1. While there is a moderate level of uncertainty due to (lack of knowledge or unpredictable stochastic event - describe), Alternative ___ would provide sufficient habitat (including known sites) to allow the species to stabilize in a pattern similar to its reference distribution.

M-2. While there is a moderate level of uncertainty due to (lack of knowledge or unpredictable stochastic event - describe), Alternative ___ would provide habitat (including known sites) sufficient to allow species to stabilize in a pattern different from its reference distribution.

M-3. While there is a moderate level of uncertainty due to (lack of knowledge or unpredictable stochastic event - describe), Alternative ___ would provide inadequate habitat to maintain the species.

H-1. While there is a high level of uncertainty due to (lack of knowledge or unpredictable stochastic event - describe), Alternative ___ would provide sufficient habitat (including known sites) to allow species to stabilize in a pattern similar to its reference distribution.

H-2. While there is a high level of uncertainty due to (lack of knowledge or unpredictable stochastic event - describe), Alternative ___ would provide habitat (including known sites) sufficient to allow species to stabilize in a pattern different from its reference distribution.

H-3. While there is a high level of uncertainty due to (lack of knowledge or unpredictable stochastic event - describe), Alternative ___ would provide inadequate habitat to maintain the species.

4. There is insufficient information regarding this species to determine how any alternative would affect distribution and stability.

NOTE: Do not use low uncertainty in relation to the low uncertainty row. We will assume it is low uncertainty if there is not a moderate or high qualifier.

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